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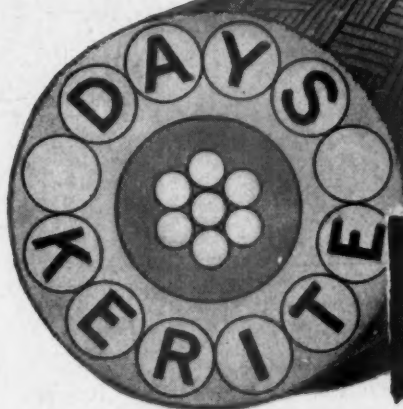
Railway Age

FIRST HALF OF 1923—No. 4

NEW YORK—JANUARY 27, 1923—CHICAGO

SIXTY-EIGHTH YEAR

KERITE



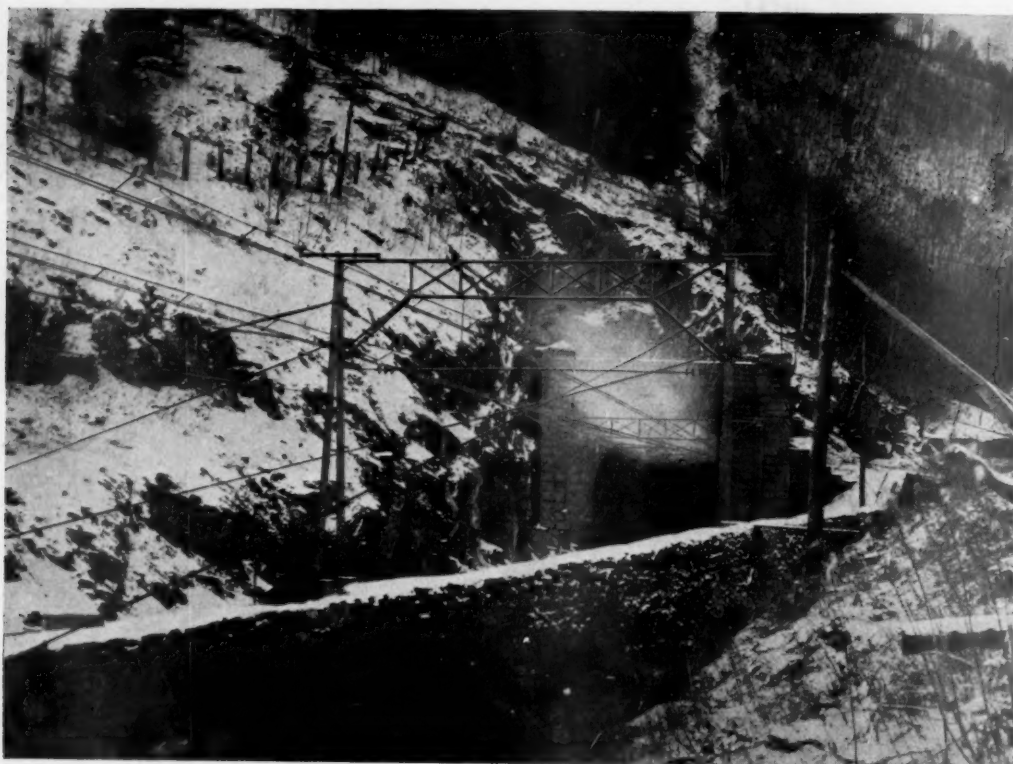
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INGOT IRON

PAGE-ARMCO LINE WIRE

Volume 74

Number 4

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EDITORIAL

The Table of Contents Will Be Found on Page 5 of the Advertising Section

The Brotherhood of Locomotive Engineers has acquired an interest in the Empire Trust Company of New York and on

Strange Bed- Fellows

the board of directors with Charles M. Schwab, Coleman du Pont and other financiers and captains of industry will sit Warren S. Stone and William B. Prenter of the enginemen's brotherhood. Announcement to this effect was made in New York on January 23 by L. W. Baldwin, president of the company. This new undertaking on the part of the brotherhood is said to be preparatory to its entrance into the banking field in New York and for the purpose of facilitating the handling of its affairs in the New York financial district. The success of the Brotherhood of Locomotive Engineers' Co-operative National Bank in Cleveland is well known, as is the unions' activity in opening up new banking houses in other industrial centers. Such activities ought to be productive of good results. They ought to bring nearer a rapprochement between capital and labor. They should interest labor in maintaining the financial foundations of our great productive industries, including the railways. If the official publication of the enginemen's brotherhood, however, mirrors accurately the economic ideas of its officers, then the more experience they can get on the financial side of industry the better. They must have a lot to learn. The *Railway Age* wishes success to this new undertaking, as a venture in education as well as in finance.

All indications point to a year of heavy transportation demands and likewise a year of large expenditures for improvements. In other words, 1923

Little Bites are Better Than Big Ones

bears all the earmarks of the typical big construction year, in the course of which the improvement activities and the transportation operations will constantly throw obstacles in each other's way. Slow orders incident to construction will impede the regular train movements, while the exacting demands of the regular train service will hamper the operation of the construction work trains. But in spite of this unfavorable aspect of the situation, it would be extremely unwise to abandon any of the improvement programs because the additional facilities are so badly needed that they must be provided as quickly as possible. How then should the work be planned so that the stress of the situation may be relieved quickly? Experience on several railroads has shown that much is to be gained by concentrating on small units of the improvement work so that they may be completed quickly and turned over to the operating department at the earliest possible date. Completion of the lighter sections of second track work in lengths of five, ten or fifteen miles, well in advance of the heavier portions, has been found greatly to relieve the congestion on a single-track line and will at the same time decrease the interference of the transportation department with the construction work. Likewise, in a project for the enlargement of a yard every track that can be completed and turned to use will help to relieve the congestion even if it can serve at the moment only as storage space. It is true that such a plan for the prosecution of the construction program may not prove

as economical as one implying the completion of the work in larger units at a later date, but in the face of the extreme demand for added facilities it is the plan which will afford the maximum relief to congestion. Little bites will prove more advantageous than big ones.

Attempts to secure legislation against the use of paint-spraying machines are not new but are being made with unusual

Anti- Paint Spraying Legislation

determination this year, especially in California, Minnesota, Wisconsin and New York. Anti-spraying legislation is admittedly being sponsored by the painters' labor organizations and, while disguised as a health measure, the root of the matter seems to be that age-old fear which the hand worker has of labor-saving machinery. It is the same fear which resulted in active opposition to the first sewing machine. Apparently the painters cannot see that the use of paint-spraying equipment, which so greatly speeds up painting operations and reduces costs, ultimately benefits both themselves and the entire community. True, some readjustments may be necessary. If paint-spraying is developed to the extent that it ought to be, fewer hand painters will be employed, but these men are thereby released for other gainful occupations and their standard of living, together with that of their neighbors, is raised in proportion to the amount of hand labor saved. Undoubtedly, paint-spraying as a method of applying paint becomes distasteful if not dangerous under certain conditions. Proper ventilation must be provided to carry away possible fumes, and protective covering is needed for the operator's mouth and nose. With suitable precautions, however, paint-spraying equipment can be used without ill effects to the operators even when applying so-called poisonous lead paints. The railroads, as large users of paint-spraying equipment, should stand ready to assist in fighting this anti-spray movement by providing affidavits as to the time and labor saved by the method, the improved quality of the work, and the lack of ill effects with proper safeguards.

In recent years a few large railroads have adopted tenders with exceptionally large water capacity. Wherever this in-

Advantage of Large Capacity Tenders

novation has been tried, it has been found to speed up train operation and it seems strange that more roads have not adopted it as a means of reducing the cost of water stops. With heavy freight trains the loss of time in taking water has become very much greater than it was a few years ago. A prominent operating officer recently estimated that the average loss of headway was 40 min. for each water stop. When the time lost in stopping the train, cutting off the engine and filling the tank, recoupling and pumping up the pressure in the air brake system and bringing the train up to speed is all considered it is evident that this estimate is not excessive. On an average division a freight train will probably make from four to six water stops. How much this costs in wages, in fuel, in delays to locomotives, cars and their contents and

most important of all in reducing the productive capacity of important lines each railroad can best estimate for itself. To offset this, how much will it cost to provide larger tender capacity and how much additional capacity will be required? Under the ordinary conditions of operation, the tender is probably refilled when it is still one-third to one-half full, because a certain reserve supply of water is necessary. Thus with a 10,000 gal. tender perhaps 6,000 gal. is used between water stops. Increasing the capacity to 16,000 gal. would make it possible to go twice as far for water or would cut out half the water stops. If the locomotive was already running past every second tank, adding 3,000 gal. to the capacity would enable the crew to go one tank further for water or reduce the stops one-third. The coal capacity is usually sufficient for about three times as long a run as the water capacity so this would not ordinarily be the limiting factor. To provide greater water capacity, would, of course, require a heavier tender which might necessitate the use of six-wheel trucks. The cost of hauling the few tons of excess weight would be practically negligible and would be offset by the saving in fuel alone through the elimination of stops. On the whole, it seems that there are few ways in which a dollar can be made to earn as much as by using it to equip locomotives with large capacity tenders.

In a letter to the editor entitled "Comparing British and American Methods of Consolidation," which was published

A New Consolidation Plan

in last week's *Railway Age*, William W. Cook presented one of the most succinct and thorough criticisms of the consolidation provisions of the Transportation Act which we have seen. There have been no consolidations as yet under the Transportation Act and apparently there remains plenty of time for full and free discussion before these provisions will be put into wholesale execution. The whole subject merits more discussion than it has yet received, however, not only as to the wisdom of the tentative groupings adopted by the Interstate Commerce Commission, but also, perhaps, as to the consolidation provisions of the act itself. It is this latter phase of the question with which Mr. Cook has dealt. He objects to the continuance of competition and, although pointing out that consolidations could not be achieved in exactly the same manner here as in Great Britain, holds nevertheless that the British plan of consolidation on a territorial, non-competitive basis is the plan which should be adopted in this country. Mr. Cook wrote his letter to us as the result of an editorial wherein we recommended to American railway men a study of the British method of consolidation, i. e. by amalgamation (exchange of securities) rather than by acquisition of control of one company over others by stock ownership or lease. In his communication he pointed out that, whereas the British Parliament has power to impose consolidation by exchange of securities on its railways, our Congress has no such power over American railways. Grouping in a manner similar to the British plan could be provided for, however, he says, by federal incorporation of a number of railroad corporations, regional in territory, authorized to issue securities in exchange for existing securities; security holders would not be compelled to exchange their present holdings for securities of the new companies but would be induced to do so by the adoption by the government of a policy designed to make the securities of the new companies practically certain as to dividends. Mr. Cook's communication is valuable and welcome. The subject, however, merits the attention of other eminent legal men, railway executives, economists, financiers and leaders of the country's thought generally. The *Railway Age* would welcome a thorough discussion of the subject in its columns.

At the hearing in Washington on Monday before Director Mahaffie of the I. C. C. Bureau of Finance no one appeared

Relief for the C. & O.

in opposition to the application of O. P. Van Sweringen, M. J. Van Sweringen, J. J. Bernet and other directors of the Nickel Plate to hold positions also as directors of the Chesapeake & Ohio. The hearing, on that account, was limited to a comparatively short time and no doubt much that might have been said was left unsaid. The time was sufficient, nevertheless, to permit the bringing out of some rather salient facts concerning the ideas the Van Sweringens have in mind in acquiring control of the Chesapeake & Ohio and its subsidiary, the Hocking Valley. The point made was in the form of an explanation of the benefit to be derived from a traffic standpoint. It was shown by President Bernet of the Nickel Plate and amplified by President Harahan of the C. & O. that under present conditions the Chesapeake & Ohio is greatly handicapped in the form of connections to the west and north. As Mr. Bernet put it, the road is having difficulty in getting rid of the traffic which it originates and there is congestion, especially at Cincinnati and Columbus, due to the fact that connecting carriers are not in a position to move properly the coal and other traffic which the Chesapeake & Ohio is in a position to hand over to them. The Nickel Plate, Mr. Bernet said, would be in a position to supply the desired remedy. Through the Hocking Valley-Nickel Plate connection at Fostoria there would be offered a line to Chicago and to the west and to the Cleveland district and east. Joint directors or joint control of the Nickel Plate and the C. & O. would permit the two companies to work out a plan of co-operation and to carry out developments which would be made worth while because of the assurance of a continuity of policy. The advantages would be mutual—possibly of greater value to the C. & O. than to the Nickel Plate. When the announcement was first made that the Van Sweringens were to acquire control of the C. & O. much was made by observers of the fact that there is little interchange of business between the present Van Sweringen lines and the C. & O. It is interesting to note that the argument made in favor of the commission's granting authority to permit the Nickel Plate directors to be directors of the C. & O. should have been primarily centered on the possibilities of traffic interchange. And, of course, it is common sense to say that the argument does not seem at all unreasonable.

Continental Europe Adopts Telephone Train Dispatching

FRANCE AND BELGIUM are rapidly adopting and extending the system of train dispatching introduced by the American Expeditionary Forces on 56 miles of the Paris-Orleans Railway of France during the war. The Orleans Railway has extended the system 69 miles, while the Paris-Lyons-Mediterranean has installed 207 miles and is extending the system on to Marseilles. Several other roads have placed smaller train dispatching telephone circuits on trial, totaling 645.9 miles of road, exclusive of the above mentioned figures. The railroads of Belgium have recently completed and placed in operation telephone train dispatching on 354.5 miles of road with a separate circuit for the dispatching of trains in each direction on 181.5 miles of road.

In less than two years the railroads of France and Belgium have thus installed train dispatching systems using telephones for communication on at least 1,334 miles, or approximately 4.8 per cent of the mileage of road operated. Now, turning to the statistics of the Interstate Commerce

Commission we find that only 1,231 miles of road in the United States were equipped with telephone train dispatching during 1921, representing less than one-half of one per cent of the mileage. Of the 246,444 miles of road operated in the United States only 123,253 (50 per cent) is dispatched by telephone, which, figured at the rate of installations made in 1921 will require over 100 years to complete the telephone system; whereas the roads of France and Belgium will complete theirs in approximately 20 years if the present rate of installation is carried out. In other words, these foreign countries which have seen a small installation of the American system of train dispatching as operated by the telephone were so impressed with the advantages that they are proceeding to install it on a majority of their systems at once; whereas many American railroads fail to use this facility on a great percentage of their lines.

The Belgians sum up a few of the essential advantages as follows: (1) To group together all kinds of information relating to the movement of trains and to repeat them to the various stations with a view to enabling them to take any action required; (2) to keep in touch with freight yards, humps and engine-houses concerning the requirements, load, etc., of both extra and regular trains; (3) to repeat over the line advice received as to delays, trains overtaken, etc.; (4) when switching yards have difficulties in receiving trains, to have others held back or switched as required; (5) to enable trains to be ready and requiring their locomotives to receive them promptly; (6) to enable light locomotive running to be reduced to a minimum.

In other words the Belgians see that the greater part of the dispatcher's time is occupied in gathering information that he can get more readily from various trainmen, yardmasters and other employees by telephone than by telegraph. The Belgians report a reduction of 60 per cent in the number of messages handled and an approximate saving, including reduced running time, overtime, etc., of \$2,600,000 a year on a section of 325 miles of road.

However, American railroad officers need not consider this foreign example to learn the advantages of train dispatching by telephone because there are numerous roads such as the Buffalo, Rochester & Pittsburgh, the Illinois Central, the Delaware, Lackawanna & Western, the Louisville & Nashville and the Burlington that do a high percentage of their train dispatching by telephone. It is well known that telephone train dispatching systems will enable economies to be effected equivalent to a high percentage of the investment involved and such improvements should not be overlooked by those authorizing expenditures.

Mr. Warfield's Dangerous Argument

AMONG THE MOST formidable obstacles encountered at present in all efforts to solve the railroad problem are various proposals for solving it which do not go to the heart of the matter and whose advocacy diverts attention from consideration of measures which are vitally necessary. Such an obstacle is the proposal for extensive consolidations of the railroads. The agitation of the question of consolidations diverts attention from the fact that no matter how many consolidations are formed the problem of providing enough transportation for the country will never be solved until the railroads as a whole are allowed to earn an adequate average net return.

Of like nature as an obstruction to the solution of the railroad problem is the plan advocated by S. Davies Warfield, president of the National Association of Railroad Security Owners, for the pooling under a new central agency of all

freight cars which are interchanged throughout the country. Mr. Warfield recently set forth his views at length in an address at Cincinnati. His whole argument in this address was based upon the premise that the shortage of transportation from which the country has been suffering for months has been due almost entirely to inadequacy of freight cars and to failure of the present organizations of the railways to distribute and move freight cars efficiently. He advocates the creation of a central "Service Corporation," having 24 trustees, one-half of whom would be business men and one-half men named by the railroads. This agency would determine what freight cars to be used in general interchange each railroad should have, finance their acquisition and control their distribution and maintenance. He said: "All you and we would ask is to charter this central agency so that another seasonal freight movement would not be faced with another car shortage." In the words italicized he made clear beyond dispute that his position was that adoption of his plan would immediately eliminate "car shortages." Of course, if it did that it would immediately remedy the entire shortage of transportation.

Mr. Warfield is president of a railroad, but he is primarily a banker; otherwise he could not have displayed such ignorance of the present railroad situation as publicly to contend that the entire shortage of transportation in this country could and would be immediately remedied by the plan he advocates. A man in a high financial and railroad position who talks as Mr. Warfield does is a menace to every owner of railway securities and to the entire country. He is a menace because a man in his position who publicly states such views as he expressed is bound to help prevent the adoption of the only measures which would really help to solve the railroad problem.

Mr. Warfield's plan for remedying the car shortage may be discussed under five headings which he himself gave in his address at Cincinnati in which he stated what he regards as "the five present obstructions to car service."

"1.—That each carrier has not furnished, both as to cars and amount, its quota of car equipment in proportion to the total requirements of transportation as a whole."

This statement is correct. He proposes to enable each railroad to provide the equipment it needs by having the financial means of providing it furnished by a central corporation. But each individual railroad finances its own equipment requirements either by itself acquiring and paying the fixed charges and maintenance expenses of owning equipment, or by paying for the use of equipment owned by others. The ability of the individual railroad to, in both or either of these ways, provide itself with equipment depends upon its individual earning capacity and credit. Most railroads have not directly or indirectly provided themselves with enough equipment because they have not had enough earning capacity to do it. No central financial agency ever will remedy that condition for any individual railroad. It can be remedied only by an increase in the earning capacity of the individual railroad.

"2.—That every carrier has not secured as high efficiency out of the cars it operates as other carriers operating under like conditions."

The efficiency with which the individual carrier uses cars upon its line depends upon the condition and adequacy of its own locomotives and other facilities, upon the operating ability of its own officers, and upon the co-operation it gets from its own shippers and consignees. No central agency such as Mr. Warfield proposes ever can or will change the conditions determining the efficiency with which cars are handled on individual railroads.

"3.—That there has never been put in effect standardized plans under which freight cars shall be produced, rehabilitated or rebuilt."

Over a long period of years there has been increasing

standardization of those parts of cars most frequently requiring renewal until at the present time there is very little delay to bad order cars because of the inability of foreign lines to make the needed repairs to them promptly. Furthermore, the committee on car construction of the Mechanical Division of the American Railway Association has been for some time, and is now, engaged in the study of designs of complete standard box cars, which are the cars most commonly used in general interchange.

"4.—That methods are not practiced that will produce a better supply, more extended use and wider distribution of certain classes of interchange freight cars now in service or to be put in service."

In other places in his address Mr. Warfield repeatedly made statements to the effect that there is now no effective agency for bringing about co-operation between the railways in the distribution of cars. To this he mainly or wholly attributed "car shortages." He said: "Because of the continuance of an exclusive policy *with no co-operating or co-ordinating agency* you gentlemen find yourselves laboring under car shortage difficulties." Elsewhere he said, "Do you believe that private operation of the railroads can continue *without some agency* such as is used in nearly every business or community to produce results?" In another place he said, "The car service agency of the railroads has not stopped car shortages during many years trial." He did, in passing, refer to the fact that there is a "car service agency," but he repeatedly made statements adapted to give the impression that there is at present no agency for bringing about real co-operation and co-ordination in car distribution.

His statements regarding this matter are grossly unfair and misleading. The railroads have in the Car Service Division of the American Railway Association an agency which performs the very function for which Mr. Warfield implied they have provided no agency. Perhaps he would retort that the agency exists, but does not function. It does not function perfectly, but it functions more efficiently now than ever before, and its organization is being extended throughout the country to make it function better. There is no reason whatever for believing that any such agency as Mr. Warfield advocates would serve the same purpose that the Car Service Division does any better or as well as it does.

"5.—That freight yard and terminal facilities are not used or being constructed such as will jointly operate to quicker load and unload cars."

There is not a real railway expert in the United States who does not hold the view that the so-called "car shortage" is merely a symptom and not a disease, and that the real disease is shortage of all facilities of railroad transportation. While Mr. Warfield, in the sentence just quoted, alludes to the shortage of other transportation facilities, his plan provides no means whatever for relieving the shortage of transportation insofar as it is a shortage of locomotives, tracks, terminals, and facilities other than freight cars, doubtless this is the reason why he makes such brief and casual reference to the shortage of other facilities. The fact appears to be that Mr. Warfield and other financiers who have supported him in his work have been wholly misled by the frequent use of the words "car shortage," and actually believe that some change in the central control and manipulation of cars will remedy the present transportation situation.

The *Railway Age* is opposed to Mr. Warfield's plan on its merits. But the worst thing about the plan is the arguments Mr. Warfield makes in favor of it. As a means of completely remedying the "car shortage," and thereby remedying the entire transportation shortage, his plan is as impracticable as an attempt of a man to lift himself over a fence by his boot-straps; and by urging its adoption as a means of completely remedying the "car shortage" Mr. Warfield is honestly and conscientiously doing his best to make any real solution of the railroad problem impossible.

The Functions of Signals in Yard Operation

AT THIS TIME of the year when plans are being prepared for the improvement work to be undertaken next spring and budgets are being submitted for approval, the enlargement and arrangement of yards is receiving special consideration. There is no class of improvements in the design of which it is necessary that operating considerations should be given greater weight than terminals. For this reason, it is important that the engineering officers should consult freely with the local yardmaster and division superintendent and with the signal officer in order that the new layout may be adapted most closely to the operating requirements.

A yard must, of course, be properly planned by the engineering forces, although it is equally important that adequate signaling and interlocking facilities should be established at the approaches and entrances in order that the traffic may enter and leave the yard with minimum delay and interference. Among the questions on which joint consultation is particularly desirable is the solution of such problems as the extent, if any, to which the main tracks should be used for switching purposes, the number of main line switches to be installed within yard limits, the extent and type of the signaling required, the method of getting trains in and out of the yards, etc.

It is recognized that traffic conditions must govern the expenditures a road is warranted in making on a project of this character. At an outlying point where traffic is light and few yard tracks are needed it may not only be permissible, but advantageous, to use the main track for switching because this can be done without appreciable delay to main line trains. Obviously, signaling or interlocking facilities would not be justified at such a location. However, as traffic becomes more dense and delays begin to occur to through trains, or when to avoid them switching crews must remain idle while staying in the clear for scheduled trains to pass, it becomes necessary to enlarge the facilities so that all yard work can be handled without using the main line. As traffic increases still further a certain amount of signal and interlocking construction may be required to prevent delays. Consequently each particular layout requires a special study of its own.

In these studies the signal department should be called in because the proposed improvements should fit into a well-planned and balanced signal system for handling maximum traffic at minimum cost. This cannot be done if congestion is allowed to occur at yards. At important terminals switches should only be located in the main track at the entrance to each end of the yard and these should preferably be interlocked or at least protected by automatic signals until such time as they can be interlocked. Switches should be avoided at other points between the yard and the main line wherever possible, because if installed there will be a tendency to use the main line for switching purposes and these switches will necessitate additional expense for protection.

It is not unusual for trains to make good running time over a division and then be delayed seriously in getting into the yard at the terminal, particularly in busy manual block territory where the blocks are none too close together. Such a condition has been remedied in many instances by the installation of automatic block signals for a sufficient distance to allow the trains to close up. In some cases it may also be desirable to build supplementary yard leads or storage tracks which will provide additional room in which to get trains off the main line if the yard is usually being worked to capacity.

Delays also often occur to trains leaving a yard; this can be remedied by constructing a running or passing track

from the yard to the next station, or to a point far enough out to allow trains to start at times when they would otherwise cause delays to main line trains or be delayed themselves while waiting for the arrival of such trains. If these sidings terminate at a point remote from a station the switches may be operated to advantage by remote control electric switch movements and train movements governed by the proper signals from the nearest telegraph or block office to prevent needless stops to throw switches.

The layout of a new yard is not a problem for the engineering department alone but one affecting three large branches of a railroad: the engineering, the signaling and the operating. The heads of these departments ought, therefore, to co-operate to the fullest extent, as only in this way can the best and most efficient yard be built or re-arranged.

New Books

Railway Signaling—Automatic; By F. Raynar Wilson, 116 pages. 4¼ in. by 6½ in., illustrated. Cloth. Published by Isaac Pitman & Sons, London, England, and 2 West 45th Street, New York. Price 85 cents.

This is one of a series of "technical primers" published by Pitman and edited by R. E. Neale. Also it can be called a continuation of the series of books on signaling issued several years ago by H. Raynar Wilson. (father of the present author), who writes an introduction to this book.

The author is an Englishman (now assistant engineer of the Victorian Government Railways, Australia) and this work is evidently well adapted to the English field; it describes the design and uses of all the elements of automatic block signaling and is brief, yet comprehensive; well-written and up-to-date. To the Englishman who is still unconvinced of the advantages of automatic block signals—if there be such—this book should afford interesting and instructive reading.

Pictograms: "The Railroad Picture Book." 34 pages; 7 in. by 10 in. Paper covers, 25 cents a copy. Published by The Pictogram Company, Washington, D. C.

This is a picture book—eighty-six beautiful halftone engravings—designed to give a good idea of the material side of railroading without using words—or with a minimum of words. For instance, two pictures giving a good idea of a wrecking train and its function fill three-fourths of a page, and the text describing them about one-fourth—nine lines of full-face type. In signaling and some other departments this extreme condensation of the text is somewhat incompatible with accuracy; but the editor has done his job with remarkable skill and discretion. Indeed, the outstanding merit of the booklet is the excellent taste and judgment with which, from thousands of pictures available, the author has selected less than 100 which give a very good epitome of American railroad structures and railroad life. The scope of the book is utilitarian, the poetry of railroad life being noticed only incidentally. The locomotive runner, the titular hero of the rail, is not lionized at all, and the only men prominently pictured are the trackmen, the mail clerks, the train directors in signal towers and the cooks in dining-cars. An appendix gives a brief list of books descriptive of railroad practices.

Future "pictograms" are to deal with coal mining, astronomy, forest industries and other things.

THE CANADIAN PACIFIC is offering two free scholarships for four years' tuition in architectural, chemical, civil, mechanical or electrical engineering at McGill University, Montreal, to employees under 21 years of age and to minor sons of employees.

Letters to the Editor

[The RAILWAY AGE welcomes letters from its readers and especially those containing constructive suggestions for improvements in the railway field. Short letters—about 250 words—are particularly appreciated. The editors do not hold themselves responsible for facts or opinions expressed.]

"Fancy Salaries" Starts Something

CHICAGO.

TO THE EDITOR:

You cannot know how much encouragement your editorial "Fancy Salaries" has afforded me, for as far back as I can remember I have always looked forward to being a railroad man. It is only recently that I have had the opportunity to be with a road, but in that short time I have received enough discouragement to convince me why young men do not enter railroad service.

I have been told that a college education would do me no good if I intended to be an operating man. I have been told that the future of the railroad is past and that it is a good game to keep out of. I have been advised to "be my own boss" and to get into a firm where my salary would be unrestricted. Railroad men have told me that the future of the railroads is government control with the same outcome as is now handicapping the Canadian roads. These men have said that the government would select their own men and I would be out of a job. They have advised me to keep out of the ranks as they are composed only of foreigners and there is no chance for advancement. I have been told it is useless without a "pull," or unless I marry into the family of one of the officers.

The failures have been pointed out to me and not the successes. They have said a man cannot be advanced on his merits but must wait his turn in the regular order of promotion. These are some of the things I came up against, but I have also noticed that some of the worst discouragement came from men lowest in the ranks, even though one was an assistant to a vice-president. I may also say that any number of letters from college graduates asking for employment have passed through my hands and in each case the answer might as well have been rubber stamped, "We realize the advantage of the college bred man over the man who has not received a college training, but at the present we have no opening, though we will keep your name on file." That is the last this college man hears and his letter addressed to the vice-president does not get past the chief clerk. Is there an answer here as to why the railroads do not get these college men? Sometimes I almost have half a mind to remain as office boy and take a chance on promotion instead of going to college and having no chance to get back with the road.

Often I wonder if these men I meet with are not just wage earners and not railroad men. I think there is a difference, for some men I have met who are with the road because they love it, will do almost anything to help me or give me encouragement. Though I have heard all of this advice it has not changed my mind for I am determined to be a railroad man, but to the man just out of college and who is not quite decided, there could be no better answer as to why the railroads do not get these college men. Let these same college men know you want them, and that there is a future, and that they have a chance, and with a little personal inter-

est shown them I see no reason whatever for their turning to other lines of business for employment. OFFICE BOY.

[We do not know the writer of this letter. Ordinarily we do not publish letters in these columns unless we do know the name and address of the author. This letter, however, contains some pretty good food for thought. Obviously it was not written by an office boy. Our guess would be that it comes from a man of wide experience who has made some considerable study of the personnel question on the railroads. If the writer is an office boy, then it is quite apparent that he will not have need of a college education to help him make good on a railroad.—EDITOR.]

Preventing Freight Claims

BUFFALO, N. Y.

TO THE EDITOR:

I see by your issue of January 20, page 247, that a general appeal is being sent out by wireless to everybody to "prevent freight claims." Not having any receiving apparatus in my house, I have not heard this invitation in detail, and so I am naturally imagining what it says.

Do the railroads object to having a claim presented, in case they damage my goods? I should think that they would work for the prevention of the causes of claims. Or, do they simply object to unfounded claims? If that is the point, they should set the Ku Klux on to the lawyers. It is the lawyers—and their pupils, the claim brokers—that put us up to making baseless or exorbitant claims.

Are there any shippers so pig-headed that they themselves are the causes of the claims which they present? If that is the case, I suppose the radio message reads—

"If a shipper of freight desires to prevent himself from presenting to the railroad a claim for damages, he should himself take such measures as may be necessary to make it impossible for the railroad to do any damage to the goods. We (the railroad) are annoyed by the great number of claims which we receive; and we wish to see fewer of them. Please do not send them in."

However, that doesn't seem just the thing. * * * Do they mean that in those rare cases where goods actually do get damaged in transit the carrier will settle with the owner without requiring him to present a bill?

Please elucidate this abstruse announcement. On the whole, I think probably my last preceding paragraph will best fit the case. Surely, any reasonable railroad officer who asks people to refrain from presenting freight claims must be understood as thereby pledging himself to see that there shall not be any occasion or excuse for making a claim.

In fact, I think I will venture to suggest, right here, that such a pledge as this would be a very suitable addition to many of the appeals, which I have seen, calling on shippers to mend their ways. B. G. SHIPPER.

Improving Employee Relations

TO THE EDITOR:

I have read the article entitled "How Can Employee Relations Be Improved" in the December 9, 1922, issue of the *Railway Age*. I quite agree with you in most of your premises as to the necessity for better co-operation among railway managements, their employees and the public.

There are several points which are not given sufficient consideration by railroad managements, and which in my opinion would go a long way toward restoring the spirit of harmony and co-operation which I know existed on some railroads, and may or may not have existed on others. One of the fundamental facts to be considered is that all men

are self-seeking and railroad employees quite naturally feel they are not taken fully into the confidence of the managements; they are suspicious of any statements made by such managements, and they have no pecuniary interest in the operation of the property which they serve other than that shown in their pay checks.

I believe that railroads should encourage their employees to purchase the stock of the railroad company which they serve, making this possible by furnishing the stock to them at the lowest possible cost, and on the easiest terms possible. They should also foster and encourage railroad savings funds, building and loan societies, and furnish free of charge advice from the legal and the land departments as to the availability of building sites, furnish free examination of titles through the railroad legal department, and possibly in some districts where the cost of building is abnormally high, co-operate with the employees in buying building material.

I believe that schemes similar to this, properly worked out, would in course of time convince employees that the railroads were interested in them, and in turn force the employees to feel that their duty to the railroad included every effort toward proper advertising of the facilities and resources of the railroad to the general public that was possible on their part. S. M. P.

A Premium on Inefficiency

TO THE EDITOR:

The article on "How Can Employee Relations be Improved?" in your issue of December 9, 1922, is very much to the point.

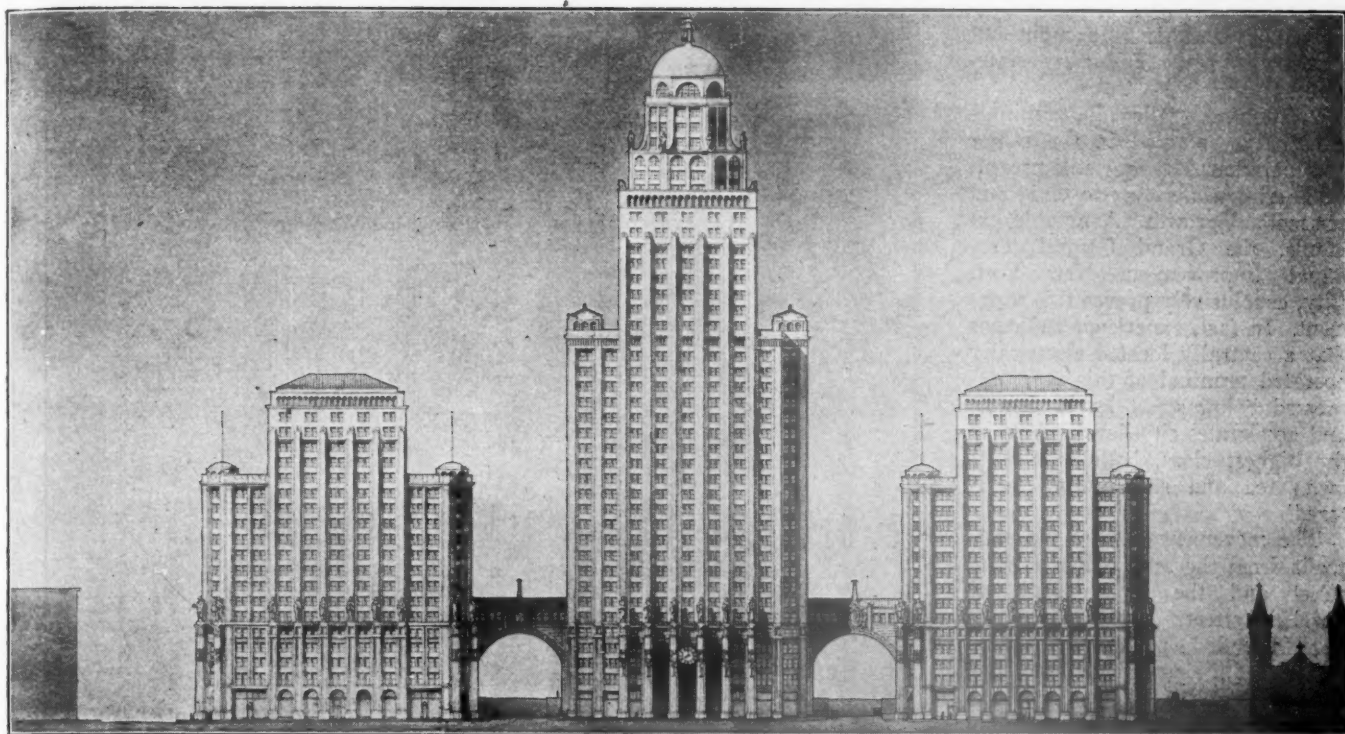
I have been very much interested for several years—in fact for a number of years—in a statement made by an old railroad man, at that time division freight agent for one of the big roads. There were three or four railroad men in the crowd. This man said that a man who gets ahead the fastest in the railroad business is the man who chucks the biggest bluff and does the least work. Each of the men present endorsed this statement—one of them at least was a man of some position.

Recently I had a talk with one of my friends who is claim agent and he told of the frightful condition in his department, and how many unnecessary claims there were. He mentioned particularly the fact that his department was paying every year to a very large manufacturer a great amount of money. This manufacturer shipped material, which while not fragile, was easily breakable if not well packed. He had been to the shipper and requested him to use better packing; the shipper, however, referred to the schedule to show he was meeting the requirements of the railroad.

Then this man went to one of the contracting agents, or traveling freight solicitors, who promptly told him to keep his mouth shut, that it was none of his business whether the stuff was broken or not—all he had to do was to pay the claim.

Shortly after that I was talking with another rather clever young railroad man. I suggested certain things that I thought could be done to advantage and he agreed. I told him just what I, as an old man, would suggest that he, a young man, should do, explaining that I would certainly be very glad if one of my employees would come to me with a suggestion that was manifestly of so much value. He very promptly told me that while he had not been with the railroad very many years he had been there long enough to know that it was very much better to mind his own business rather than to go to any of his superiors with suggestions.

All of this you undoubtedly know, but I think if general business was run along these same lines that a good many of us would have to close up. SHIPPER.



Polk Street Elevation of the New Terminal

Chicago Gets a New Passenger Terminal Plan

Western Indiana Completes Preliminary Study for New Facilities on the Dearborn Station Site

DISCUSSION of railway terminal development in Chicago has been given renewed impetus by the presentation of plans for an entirely new project by the Chicago & Western Indiana. These comprise studies for the improvement of the entire area occupied by this road and its tenant lines north of Sixteenth street for the purpose of providing passenger and freight facilities of sufficient capacity for the roads participating in the present terminal and capable of expansion to accommodate as well all of the roads now using the LaSalle and the Grand Central passenger stations. The plan is of vital interest to the City of Chicago because it represents a step toward the provision of modern, adequate facilities for all of the railroads not already a party to new terminal developments in that city as represented by the North Western and the Union stations and the Illinois Central project.

The Chicago & Western Indiana is a terminal road controlled by the Wabash, the Grand Trunk, the Erie, the Monon and the Chicago & Eastern Illinois, all of which make use of the terminal railway as an entrance to the city and for passenger and freight terminal facilities. Two other roads, the Chesapeake & Ohio and the Santa Fe, are tenants. The other two groups of railroads referred to are those using the LaSalle street station, namely, the New York Central, the Rock Island and the Nickel Plate, and those using the Grand Central station in conjunction with the Baltimore & Ohio Chicago Terminal Railway, namely, the Baltimore & Ohio, the Pere Marquette, the Chicago Great Western and the Minneapolis, St. Paul & Sault Ste. Marie.

It will be recalled that the Illinois Central terminal project was conceived on a scale that would afford ample passenger terminal facilities for all the railroads now occupying

passenger terminals between State street and the river in addition to the three railroads now using the Illinois Central's existing passenger station. However, none of the roads in the Dearborn, La Salle or Baltimore & Ohio group has definitely accepted the Illinois Central's invitation, and it has been known for some time, unofficially, that the Western Indiana as well as the other two groups having stations between State street and the river have been at work on independent plans, to determine whether the property which each of them occupies could not be utilized for the development of new and adequate facilities capable of accommodating not only the roads of the group in question, but also of the roads of the other two groups as well. The Western Indiana plan is the first of these to be made public and is described and illustrated in a report prepared by Alfred Fellheimer, architect and engineer, New York City, and submitted to H. G. Hetzler, president, and E. H. Lee, vice-president and chief engineer of the Chicago & Western Indiana.

In general, the Western Indiana plan provides for a new passenger station located on Polk street and extending from State street to Clark street and a freight development south of the passenger station to accommodate the roads now using freight facilities located on the Chicago & Western Indiana terminal. In case of participation in this project by the so-called LaSalle group, freight facilities could be provided for these roads in the area between Clark street and the Chicago river.

The keynote of the entire report is the development of a monumental terminal plan along lines that will overcome the oft-raised objection to railway occupancy of an area in such close proximity to the main business or "loop" district

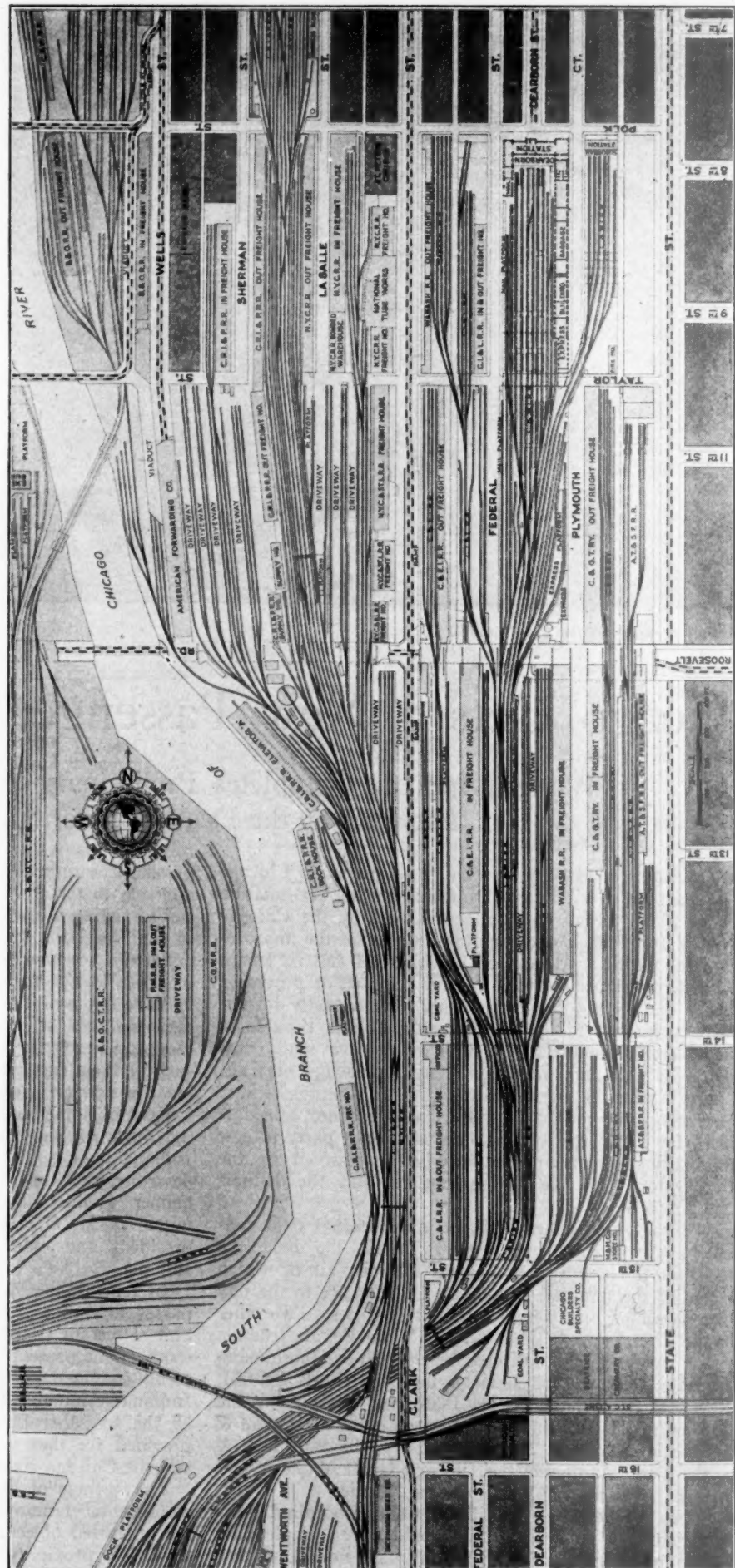
of the city. This is brought out distinctly in the following statement:

"Extensive railroad terminals may be maintained in the center of a populous city and still present no barrier whatsoever to civic and commercial growth. A notable example, the Grand Central Terminal Improvement, New York City, conclusively proves this statement. In fact, experience indicates that a centrally located electrically operated terminal of this type, depressed below street level, attracts and accelerates city development of the highest class, both within its own area and surrounding territory."

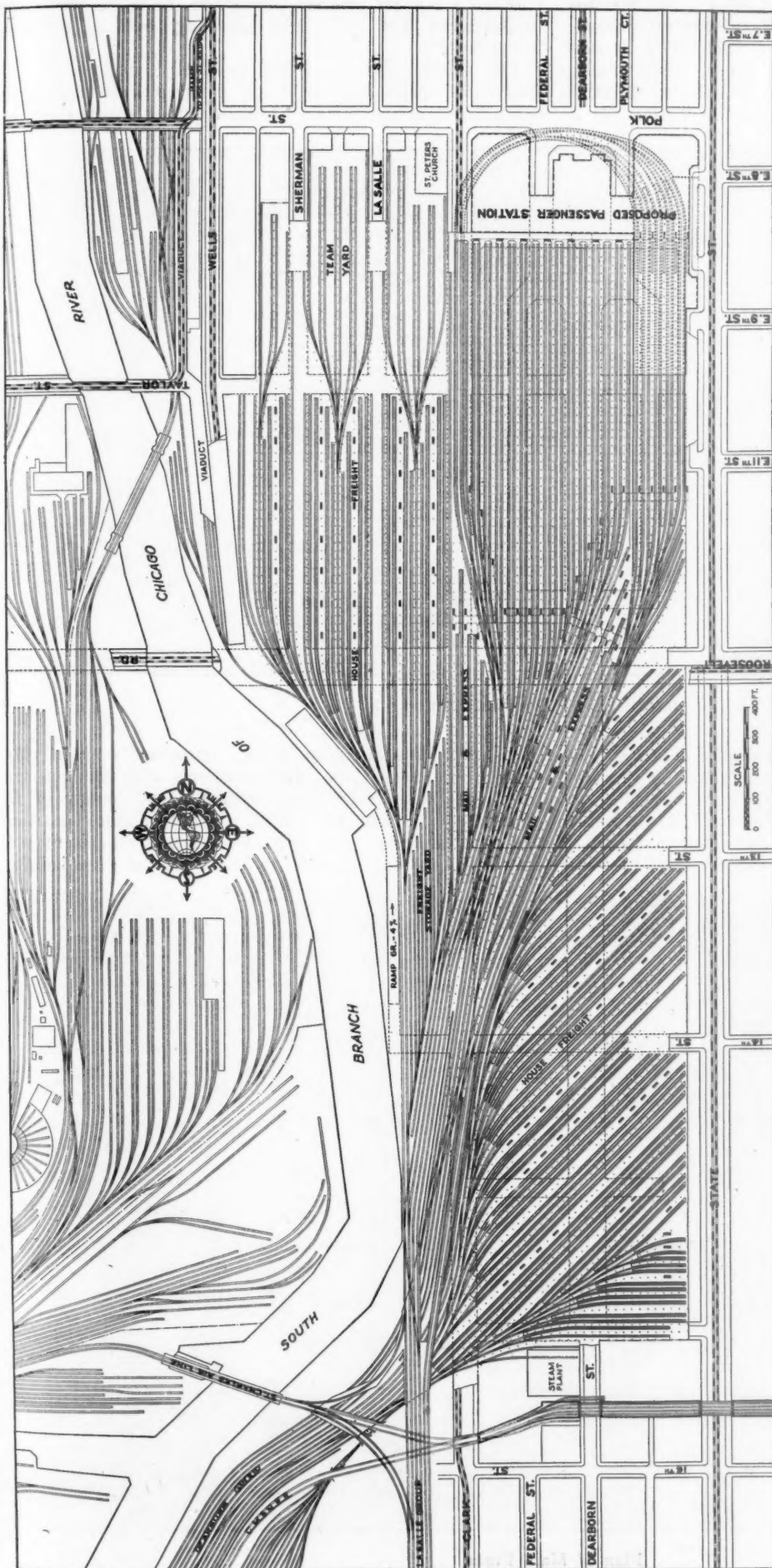
The movement to oust the railroads from the area between State street and the river, north of Twelfth street, in Chicago, has been founded primarily on the claim that their presence there has imposed a restriction on the development of a system of adequate north and south arteries of street traffic. Accordingly, the new terminal plan has been devised to overcome this objection. It embraces a comprehensive street plan covering the entire terminal area, the predominating feature of which is the extension of Dearborn street southward across the terminal area as a through artery with a boulevard width of 120 ft. As another means to the same end, the plan is especially complete in demonstrating the possibility of air-rights development. One statement from the report with respect to this is as follows:

"The proposed State Street Terminal Improvement is directly comparable, in respect to its air-rights development, with that already effected and under way at the Grand Central Terminal, and with proper direction similarly satisfactory results can be obtained, enabling the interested railroads to make a definite contribution to the city's commercial growth, in the shape of a model business center which will act as a stimulus and guide for the intelligent development of the contiguous territory and at the same time insure to the railroads the greatest possible financial return."

The report points out that the project is definitely committed to a co-ordination with the Chicago Plan Commission scheme for civic improvement, particularly with respect to the development of necessary through streets. There is also nothing in the plan for terminal development that would interfere



Existing Condition of Site



Final Improvement—Track Level

with the project for the straightening of the south branch of the Chicago river.

As suggested already, electrification is also accorded due consideration in the plan. While arrangements have been made for an initial stage of development of both the passenger and the freight facilities which would in no way interfere with the continued use of steam locomotives, the final plan is clearly committed to the use of electric power.

In general, the plans for the new terminal represent a recasting of the existing arrangement on a modern basis and to monumental proportions. The approach tracks leading from the south expand into a stub station of 37 tracks served by a headhouse facing on Polk street, the passenger station tracks being substantially on the same level as Polk street. Actually the station tracks will be somewhat lower than the street, but the difference in elevation will be overcome by ramps of such moderate grade that the transition from the one grade to the other will not be apparent. An exception to this rule is proposed in connection with the 10 tracks nearest State street, which are to be used for suburban service in conjunction with a loop similar to that provided in the Grand Central Terminal in New York, whereby the suburban trains which would use these 10 tracks would be released via a two-track loop turning westward under the headhouse and thence south on two tracks flanking the west side of the passenger station grid. These 10 suburban train tracks would be necessarily depressed below the level of the other tracks to effect this arrangement.

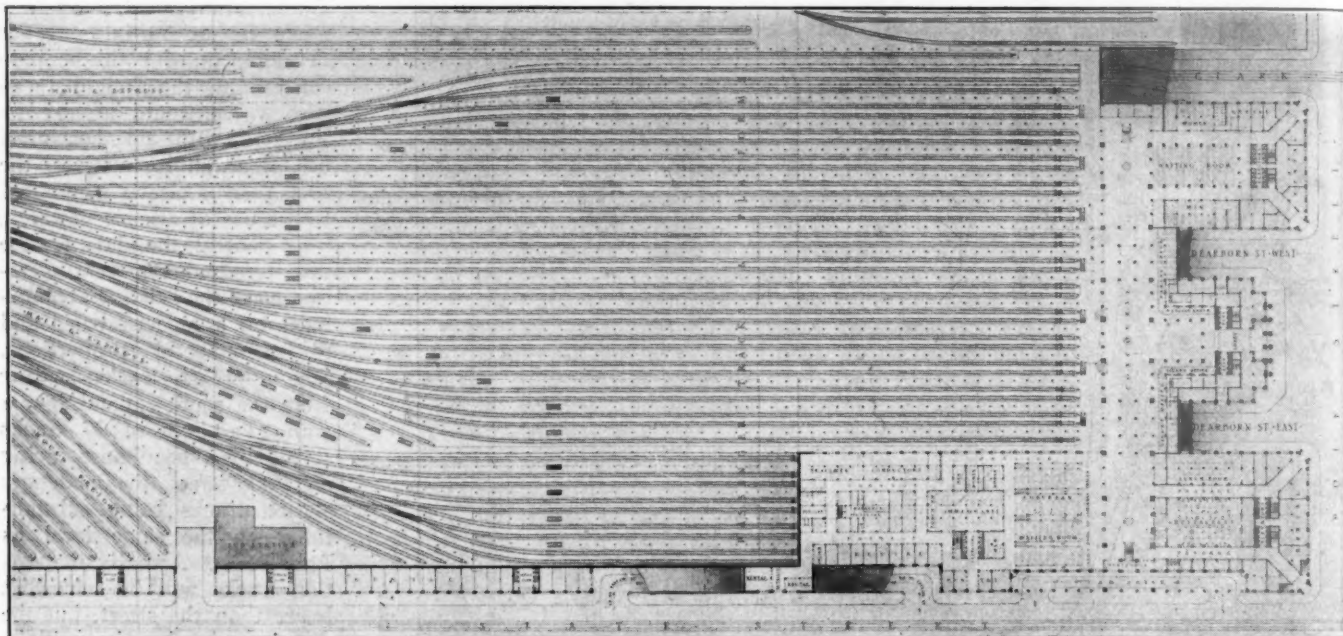
The design submitted for the passenger station is clearly founded on the idea of maximum return on the investment, a principle that is definitely stated in the report.

"Recognizing the fact that a railroad is essentially a commercial enterprise, governed by the same basic economic laws, it must furnish efficient service at the lowest possible cost. Its instruments of service should be designed with the greatest regard for economy in

cost and operating expense, consistent with their intended purpose. This particularly applies to passenger stations, especially when they occupy valuable land which is susceptible of development for commercial usage. They should, therefore, be designed so as to make possible the effective utilization of all by-products for revenue production. It is

possible space for revenue production, so as to render the improvement not only self-sustaining but a profitable investment."

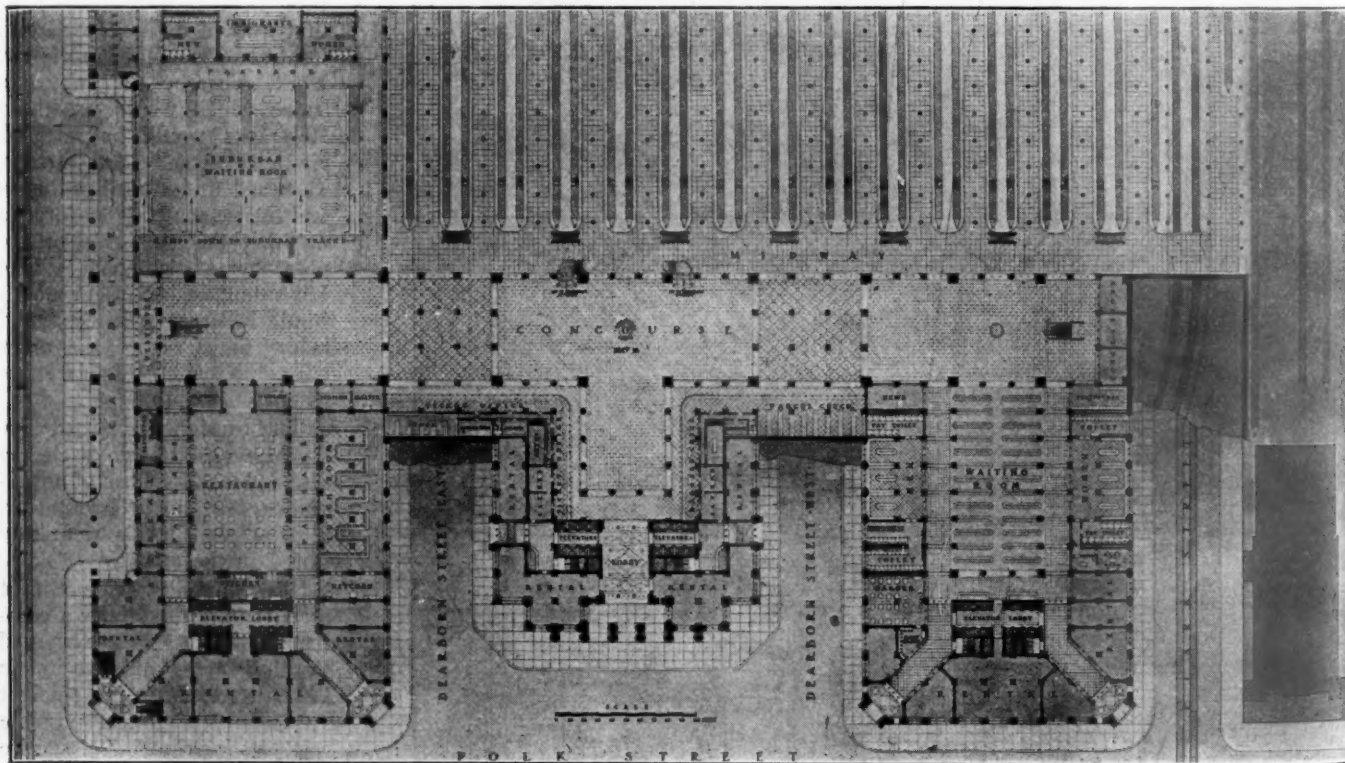
The station plan is of the so-called concourse type in which the mass movement of passengers to and from the trains and the various essential public utilities is con-



General Plan of Terminal Station

with this end in view that the general design of the station building group, fronting on Polk street, has been evolved. This group consists of three modern office buildings of harmonious design, with monumental effect obtained through their size and grouping, and with the station facilities planned to permit utilization to the highest degree of all

finned to the concourse itself, the concourse being in effect extended to the principal street entrances with all important passenger facilities in direct contact. One feature of the plan which has entailed a large amount of study has been the coördination of the proposed street arrangement with that of the station. In order to fit the plan of three building



Plan of Main Floor

units, Dearborn street has been divided into two parts and carried to either side of the central unit at a grade ascending southward such that the street is well above the tracks where they terminate on the midway. Because of this treatment of Dearborn street, the concourse, which has been given architectural treatment requiring a lofty ceiling height, is necessarily divided into three sections by the relatively low passageways under the street, a requirement which has been found of advantage from the architectural standpoint as well as to effect a certain logical division in the arrangement of the station facilities. Attention is called in the report to the fact that the plan should be considered in the nature of

Roosevelt road, Thirteenth street and Fourteenth street, which are designed to serve the street vehicle level of the freighthouse area. This arrangement would avoid interference between the freight trucking on the last-named street and the through street traffic on Dearborn street. Adequate provisions for driveways on this intermediate level is also provided north of Roosevelt road to serve the baggage, mail and express facilities of the passenger station.

The plan for the freighthouse development provides for an initial stage in which all of the freighthouse facilities will be on the track level. This is proposed in order that a considerable part of the terminal improvement may be car-

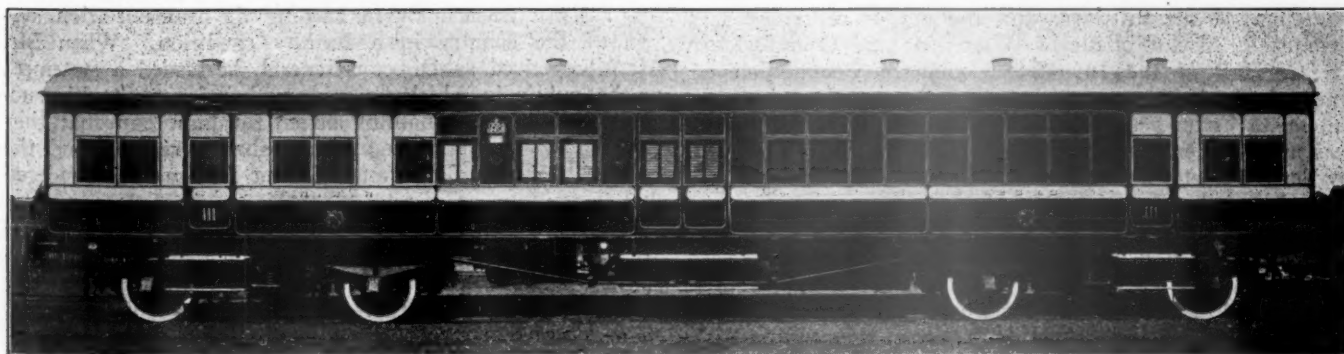


Combined Air-Plane and Art View Illustrative of Final Development

a general study capable of a high degree of modification without disarranging the general basic plan.

The freighthouse plan has been developed on the basis of the two-level arrangement with tracks on a semi-depressed level and the street vehicle service on a level above the tracks. As a consequence, the freighthouse plan is definitely co-ordinated with the plan for the projection of new streets across the terminal area which are necessarily carried on viaducts above the tracks. A unique feature of the street arrangement is to be found in the placing of Dearborn street and Taylor street on an upper level independent of

ried out without the necessity of adopting electric motive power, as will be the case as soon as a two-level plan is carried out. The plan provides, however, that the track arrangement in this initial stage will correspond to that required for the final construction save that the full development will include considerable additions to the number of tracks in the area occupied on the lower level temporarily by the driveways, platforms, etc. As stated in the report: "The freight buildings, in the one-level-stage, should be of semi-permanent construction, with low cost materials and be especially designed to permit easy demolition when required."



A Typical Third Class Combination Coach and "Brake Van" in India

S. M. Felton Answers Senator Brookhart

"RECKLESS MISREPRESENTATIONS" was the characterization applied by Samuel M. Felton, chairman of the Western Railways Committee on Public Relations, to many of the assertions regarding railway matters made by Senator Smith W. Brookhart of Iowa in a recent speech in the Senate. Mr. Felton's assertions were made in an open letter to the senator calling him to account for his attacks on the railroads and their officers in which he denounced as "base and unsupported calumnies" the charges made in the speech that railway officers did not loyally serve the government during the war. Mr. Felton said in part:

"An illustration of the way in which you make statements that have no basis in fact, is afforded by your assertion that, largely owing to inability to pay the freight rates, the apple growers of the state of Washington will this year be forced to dump 10,000 carloads of apples into the Columbia river. A telegram from the Wenatchee Valley Association, composed of the growers in the apple district of Washington, says that your statement 'is not true,' and adds: 'The district has already shipped about 8,000 cars, and there remain about 5,500 cars. No question but that balance of them will be shipped, especially the late hard varieties. Mid-winter varieties are suffering on account of inability to move owing to lack of equipment, and it may be possible that a very small percentage will not move, but this is hardly possible.'

"As the telegram shows, the shipment of apples has been interfered with by shortage of transportation, not by freight rates. This shortage of transportation is due mainly to the policy of restrictive regulation which has been followed for years, and nothing could be better adapted to protract and increase it than the adoption of the policy of confiscating a large part of the value of the railroads which you advocate.

"As has been your custom in speeches you have delivered in Iowa, you made numerous statements upon the subject of railroad valuation which were grossly incorrect and misleading. You said: 'The valuation of nineteen billion dollars, in round numbers, as the basis of rates is unjust. It was made under the rules set forth in this law (Transportation Act).' After having alluded to an estimate that the market value of all railroad securities was only twelve billion dollars, you added: 'This means all the stocks and all the bonds representing the entire value of all the railroads in all the United States could be bought on the market for seven billion dollars less than the valuation fixed by this law.'

"The Transportation Act said, with reference to valuation, that the Interstate Commerce Commission should determine the aggregate value of the railways, and that in doing so it 'may utilize the results of its investigation under Section 19-a of this act insofar as it deemed by it available.' What is 'Section 19-a?' It is that part of the Interstate Commerce Act passed in 1913 requiring the commission to make a valuation of the railways, and the author of which was Senator R. M. LaFollette of Wisconsin; and Commissioner H. C. Hall of the Interstate Commerce Commission on January 5, 1922, presented to the Senate Committee on Interstate Commerce a memorandum showing the valuation was made under the rules and based on the data prescribed by the LaFollette law of 1913, and not under what you call the rules of the Transportation Act.

"You advocated legislation providing for a valuation based upon the market prices of railway securities. The market prices of railway securities were at the lowest point ever reached in 1920 because as a result of government operation the net return actually earned in the three years ending with 1920 was only 1.7 per cent, as compared with 5.2 per cent in the three years before.

"Do you seriously claim that the government should so manage the railways as to cause an enormous depreciation in the value of their securities, as it, in fact, did, and should then base a valuation of them upon this depreciated value? As a lawyer you know that such action by the government would involve wholesale and unconstitutional confiscation of property. Why do you, as a senator, advocate a policy which, as a lawyer, you know the government could not constitutionally adopt?

"You asserted that under the Transportation Act the Interstate Commerce Commission is 'now commanded to levy rates high enough to yield a return of six per cent upon the valuation of \$18,900,000,000' and you referred to this as a 'guarantee' to the railroads. If the law gives such a command the commission has thus far disobeyed it. The net return the railways have earned on the valuation since it was made in 1920 has averaged only about 3½ per cent, or more than a billion dollars less than a 6 per cent return. The Interstate Commerce Commission, however, has expressly and repeatedly held that the law does not give the railways a 'guarantee.' In its opinion in the reduced rates case decided in the spring of 1922 it said: 'Determination of the percentage (of net return allowed to be earned) implies or carries with it no guarantee. Read in connection with the provision for the recapture of one-half above six per cent it is, indeed, *instead a limitation.*'

"You have been as reckless in the use of railway statistics in the past as you are now. In December, 1917, when you were an avowed advocate of government ownership, you appeared as a witness before the Senate Committee on Interstate Commerce and estimated that under government management railway operating expenses could be reduced over \$400,000,000 a year. Government operation was adopted immediately afterward, and in the first year it was in effect operating expenses increased over one billion dollars. Perhaps you thought some explanation was due from you as to why your estimate of railway expenses under government operation proved to be \$1,500,000,000 too small the first year. This may be the reason why in your recent speech in the Senate, in referring to the results of government operation you said: 'I do not question the integrity of the Director-General of Railroads. He was both able and loyal to his country, but down below him, perhaps below his possible touch, were managing officers who were neither loyal to him nor to the government of the United States. They wanted to discredit government operation so that the railroads would be turned back. They were traitors as truly as was Benedict Arnold.'

"Statements made by both W. G. McAdoo, who was Director-General of Railroads in 1918, and Walker D. Hines, who was Director-General in 1919, are the best answers to your charge. Mr. McAdoo in his report to President Wilson said: 'The full and sympathetic co-operation of the various regional directors, federal managers, operating officers and employees has proved most effective in meeting the enormous problems facing the railroads, and their work has assisted enormously in keeping the transportation system of the country in a healthy condition.' When Mr. McAdoo retired as Director-General, he issued a statement to the public in which he said, with reference to his successor: 'I can ask nothing better for him than that they (railroad officers and employees) shall give him and the country the same loyal and efficient service they rendered during my term as director-general.'

"A sound solution of the railroad problem depends upon an intelligent and fair public opinion. Such an opinion can be based only upon knowledge and understanding by the public of the facts regarding railway affairs. Such speeches as yours have a direct tendency, and are apparently made with the deliberate purpose, to mislead the public and thereby to prevent a solution of the railway problem"

Western Roads Heard on Consolidation Plan

Testimony on Proposed Union Pacific-North Western, Southern Pacific-Rock Island and Santa Fe Systems

WASHINGTON, D. C.

VIEWS OF THE VARIOUS railroad companies regarding the Interstate Commerce Commission's tentative consolidation plan were presented, together with the basic statistical data desired by the commission, at a hearing before Commissioner Hall on January 17-23 on proposed Systems Nos. 13, 16 and 17. Some additional testimony was also presented by representatives of the Great Northern and Northern Pacific on Systems Nos. 14 and 15. It is understood that the commission hopes to complete its consolidation hearings this spring, and to promulgate a plan before the end of the year.

System 13, Union Pacific-North Western

W. H. Finley, president of the Chicago & North Western, approved in a general way the grouping of this system with that of the Union Pacific, but said that for the full protection of the existing routes it is necessary to add the Central Pacific, which the tentative plan places in the Southern Pacific system. He directed attention to the heavy traffic from Chicago to Omaha, brought about by the large interchange with the Union Pacific, and said that a disturbance or destruction of this interchange would greatly decrease the density on the North Western and would leave it with facilities far greater than its requirements necessitate. He also pointed out that the North Western and the Omaha have been held to constitute one line of railroad and that the system should be preserved intact. Explaining various exhibits, Mr. Finley said:

President Finley's Views

"The North Western Company was the first road to join the Union Pacific-Central Pacific companies in establishing a through route for trade and commerce between Chicago and San Francisco, and was the first to join them in carrying out the national policy expressed in the railroad acts of promoting commerce between the east and the Pacific Coast. During the past 53 years the three companies have maintained a through route from Chicago to San Francisco for the carriage of freight and passengers.

"The North Western is the only road operating between Chicago and the Missouri river serving an extensive territory and originating and controlling a large traffic which is not in competition with the Union Pacific-Central Pacific systems. It has more mileage east of the Missouri river than any connection of the Union Pacific, and does, therefore, offer a wider field for the distribution of western traffic moving from the West into its territory.

"The North Western system originates on its rails and transports a greater tonnage than any carrier operating west of Chicago. It has more tonnage to deliver to its eastern connections than any road, and in return receives a great volume of tonnage from those connections.

"It has more available tonnage for the maintenance and upbuilding of existing routes between Chicago and California than any of the roads west of Chicago. It has a very large volume of traffic moving east and west between Chicago and Omaha, much greater than any of its competitors, and also moving north and south between Omaha, Twin Cities and Duluth. This traffic has been built up on routes of trade long established and thoroughly developed and equipped, and the North Western system is vitally interested in maintaining those routes.

"The North Western system is the only connection of the

Union Pacific that can provide gateways through the East and Southeast, such as Milwaukee, Peoria, Manitowoc and Duluth, offering all-rail as well as rail-and-water routes to points east of Chicago.

"The North Western Company has never invaded the territory of the Union Pacific system, and has always found its interests were best served by co-operating with that system in upbuilding and maintaining the existing routes of trade and commerce between Chicago and California.

"In view of the foregoing considerations, any grouping of the roads that would artificially divert traffic from the North Western system by disturbing or destroying existing routes of trade, would be disastrous to that system and contrary to public policy. If the routes now used are taken from the North Western system or materially disturbed, the result will be a great loss to its tonnage and revenues, and the commission is most earnestly requested not to take such action.

"I believe, therefore, that a grouping of the North Western, Union Pacific and Central Pacific systems into one system will carry out the spirit as well as the letter of the law, and will work justice to all and fully satisfy public policy.

"In conclusion I will state that the Chicago and North Western system has no plans and no desire to consolidate with one or more other roads. From its past record and future prospects it believes it has been and will continue to be a self-sustaining system, and will be able to render in the future as good service as it has rendered in the past. There must, however, be no destruction or undermining of the routes of trade provided by nature and built up in part by the efforts and expenditures of the North Western system and constituting the backbone of its existence."

H. R. Harris, vice-president of the Lake Superior & Ishpeming, said that a consolidation of this line with System 13 as proposed would force a separation of the road from the Munising, Marquette & Southeastern, which would do great injustice, as they are operated together and are mutually interdependent. He also opposed the idea of consolidation on the ground that the road is of a special character, devoted almost entirely to the iron ore traffic of the Cleveland-Cliffs Iron Company. When pressed by Commissioner Hall for an expression as to where the two roads should be placed, he said they should probably be grouped with the North Western although such a plan had not been discussed.

System 16, Santa Fe

The Atchison, Topeka & Santa Fe, through S. T. Bledsoe, general counsel, expressed a wish that the commission authorize and approve the consolidation for purposes of ownership and operation of the properties of the company and all of its affiliated system lines, including the Gulf, Colorado & Santa Fe, the Panhandle & Santa Fe, the Grand Canyon and the Rio Grande, El Paso & Santa Fe, together with 26 affiliated non-operating companies. He said it would be shown that these lines constitute well established "existing routes and channels of trade and commerce which it is the duty of the commission to preserve and maintain and that better transportation can be supplied the public by consolidation and the vesting of title in the Atchison, Topeka & Santa Fe. It was not the intention, he said, to present objections to the inclusion in the Santa Fe group of any one of the lines proposed to be included in the commission's tentative

plan, the Colorado & Southern system lines, the Denver & Rio Grande Western, the Western Pacific, the Utah, the Northwestern Pacific and the Nevada Northern. It is assumed, Mr. Bledsoe added, that in carrying out the plan of consolidation no carrier is expected to part with its property for less than its actual value; that is, value ascertained on the basis of its earning power, with due regard to the physical condition and its adequacy as a transportation plant, and that no carrier is expected to pay any more than such actual value for the property of any other carrier regardless of what may have been the original cost or the present cost of replacement thereof.

President Storey Expresses General

Approval of Grouping

A. L. Conrad, assistant general auditor, presented statistical exhibits regarding the system and its traffic and was followed by W. B. Storey, president, who expressed general approval of the grouping proposed in the commission's tentative plan. However, he said, the commission's grouping does not provide the system with entrance to necessary gateways nor give recognition of the fact that further expansion is necessary. The system regards an entrance to the St. Louis gateway over a low-grade line as necessary in the interest of the territory and people it serves and also for its own protection in competition with all of its group competitors, all of which have or are given access to the St. Louis gateway, as well as to Chicago, while some would also be given access to Memphis and New Orleans. Later under cross-examination by E. J. White, general counsel of the Missouri Pacific, Mr. Storey said he regarded access to St. Louis as more important than the D. & R. G. W. and Western Pacific lines to California and that work on obtaining a line from Kansas City to St. Louis partly by use of the Burlington trackage and partly by new construction had been delayed by the war.

As to the Northwestern Pacific, which is owned jointly with the Southern Pacific, Mr. Storey said it would be disastrous to have it segregated from the Santa Fe because of the access it affords to timber supply, but it would be agreeable to it and consistent with any general plan of consolidation to permit continued joint control. The inclusion of the Colorado & Southern lines, he said, would afford advantages to the system but the inclusion of its entire mileage would extend northerly in Colorado well beyond the limits of the territory at present served by the Santa Fe system lines. The inclusion of the D. & R. G. W. and the Western Pacific would form a natural route and would enable the Santa Fe to reach points in California which it cannot now reach. It would also give a line from Chicago to San Francisco of 2,609 miles, shorter than any other except the Northwestern-Union Pacific-Central Pacific, 2,261 miles.

Texas & Pacific Would Connect Up

Santa Fe Lines in Texas

In reply to questions by Prof. Ripley, Mr. Storey said that the Texas & Pacific might be of advantage to the Santa Fe but not so much for the purpose of giving an entrance to New Orleans, which he said was not greatly needed, but to connect up its lines in Texas. When Prof. Ripley asked about the profitableness of lines in Texas, Mr. Storey said that except in years when there is a large movement of wheat for export via the gulf, the Texas lines are generally "in the red" because of the low rates allowed in Texas and because of the sparsely settled country. When Commissioner Hall asked if the Shreveport case had not corrected that situation, Mr. Storey said it had helped but that the rates were still too low. J. E. Gorman, president of the Chicago, Rock Island & Pacific, asked whether, if the D. & R. G. W. and Western Pacific were added to the Santa Fe system, it would be his idea that the present joint routes and rates with the

Rock Island would be continued. Mr. Storey replied in the affirmative.

Disposition of Colorado & Southern

Hale Holden, president of the Burlington and the Colorado & Southern, asked that his testimony regarding the importance of the Colorado & Southern to the Burlington system, which had been given at the time that was under consideration, might be made available in connection with the consideration of System No. 16. He said that to give the Colorado & Southern to the Santa Fe would eliminate practically all competition between Colorado and Texas, where the Santa Fe already has a line. He also said he wished to point out that a combination of the D. & R. G. W. and the Western Pacific with the Santa Fe would leave the Burlington at Denver without access to the territory beyond on competitive traffic. When Prof. Ripley asked if he thought the Burlington should have access to the Pacific coast, Mr. Holden said he only asked for a connection, but he objected to turning over the available connection to its competitor. Questioned as to where the D. & R. G. W. and the Western Pacific should be placed, Mr. Holden replied that would depend somewhat on what is done with the Central Pacific, which, he said, seems to have been disposed of, although the commission has not yet announced it. He also said that if the Southwestern lines are to be brought into Chicago, he thought the Burlington should be allowed to get into the Southwest. S. T. Bledsoe, general counsel of the Santa Fe, asked if it was his idea that the D. & R. G. W. and the Western Pacific should be used as a connection for lines not having access of their own to the Pacific Coast. Mr. Holden said the idea was at least worth studying and at Professor Ripley's request he promised to submit some suggestions at a later time.

System 17, Southern Pacific-Rock Island

J. E. Gorman, president of the Chicago, Rock Island & Pacific, testified that the Rock Island is not seeking consolidation, but said that if it is to be combined, the proposed combination of the Rock Island, El Paso & Southwestern and Southern Pacific is a natural one and would constitute a competitor for the Santa Fe with approximately the same mileage between Chicago and San Francisco. This system in the tentative plan also includes the Nevada Northern, San Antonio & Aransas Pass, Trinity & Brazos Valley, Midland Valley, Vicksburg, Shreveport & Pacific and Chicago, Peoria & St. Louis. Mr. Gorman objected to the inclusion of the Chicago, Peoria & St. Louis and said that in looking for a way to avoid it, he had thought that the line of the Wabash from East St. Louis to Chicago, which the tentative plan assigns to the Erie, might be included with the Rock Island. He said that an eastern road should not be allowed to have an entrance to St. Louis through Chicago and he doubted if the Erie would want it. Also, he said, that the Rock Island is now the long line between many commercial centers and he thought it should not be handicapped by having such a long line between Chicago and St. Louis as that via the Chicago, Peoria & St. Louis, 361 miles, against 284 miles by the Wabash. Mr. Gorman said also that the commission might very well give the Colorado & Southern to the Southern Pacific if the Burlington is not to keep it, as the Santa Fe already has a line between Colorado and Texas. He also said that the Burlington line north of St. Louis on the west bank of the Mississippi river would round out the Rock Island. Mr. Gorman objected somewhat to the proposal to give the D. & R. G. W. and the Western Pacific to the Santa Fe, saying that the Rock Island would not fare very well if the Santa Fe or the Burlington had these lines as both they and the Rock Island are Chicago lines. He would rather see the Missouri Pacific, D. & R. G. W. and Western Pacific in one system because they

are not Chicago lines and because they were once in a single system, but he admitted that he was speaking from the selfish standpoint of the Rock Island. Mr. Gorman also said that consideration had been given to the idea of placing the St. Louis Southwestern in the system with the Rock Island.

L. A. Jones, president of the Vicksburg, Shreveport & Pacific, objected to any plan which would separate it from the Alabama & Vicksburg, with which it has been jointly operated and he suggested that the two roads might be given to some system interested in traffic between the Southwest and the Southeast. A. J. Converse, representing the Chicago, Peoria & St. Louis, said that the road has an application pending before the commission for authority to abandon its line, but that if the commission desires it, a representative of the bondholders would be glad to submit later some suggestions as to what might be done with the road and Commissioner Hall said that might be done.

The Union Pacific and the Southern Pacific were excused from presenting testimony at this time because they have been busily engaged in the case involving the Central Pacific and also presumably that the commission may have an opportunity to decide that case before considering their positions as to the consolidation plan. The El Paso & Southwestern also asked permission to make this presentation at a later date.

The hearing was adjourned without date, but Commissioner Hall asked that the roads be prepared for another hearing on short notice.

Northern Pacific Objects to Combination with St. Paul

Testimony on behalf of the Northern Pacific, by way of rebuttal to that of the Great Northern officers who had asserted that a combination of the Northern Pacific and the St. Paul would work better than one of the Great Northern with the St. Paul, was heard on January 18 and 20, following the statement by President Donnelly of the Northern Pacific on January 17, which was published last week. A. M. Burt, assistant to the vice-president of the Northern Pacific, discussed the situation from an operating standpoint, asserting that "the Northern Pacific has a transportation machine with developed capacity for economical operation much in excess of present needs, and of greater capacity than either the Great Northern or the St. Paul lines, and does not need the additional capacity that an added transcontinental line would afford. "It is in a position to provide reliable and efficient service for the territory reached by it either directly or through its connections," he said, "and if, with improved service, either present or future, a combination of roads is to be made, it should not be a combination of the Northern Pacific and the St. Paul lines. Taken altogether, it is doubtful if any considerable operating economies would result from a combination of the Northern Pacific and St. Paul. The present tendency is clearly toward a greater common use of facilities that have already been provided, irrespective of their ownership, and should the time come when substantial operating economies are obtainable through joint use of the Northern Pacific and St. Paul lines where they run parallel, it seems probable that arrangements to this end will be effected between the two companies. It also appears that a grouping of the Great Northern with the St. Paul might make possible much more substantial operating economies than could be effected by a combination of the Northern Pacific and the St. Paul."

Northern Pacific and St. Paul Should Not Be Combined

Mr. Burt described the stretches of double track or alternate lines provided by the Northern Pacific at strategic points to increase its capacity and avoid delays, and also the grades and other factors, as compared with those of the Great Northern and the St. Paul, to show that its situation would not be materially improved by ownership of the St. Paul line and

he pointed out many features of the operation to show that the two roads would not fit well together. For example, he said that two railroads running near together cannot be combined into a double track system unless they come together at their engine terminal points. If they come together only every two or three hundred miles double-track operation is impossible. He also said that district terminal points cannot be changed without great expense and waste of existing investment, and he showed how the two lines serve separate local communities, to which service could not be abandoned. The Northern Pacific's crossing of the Rocky Mountain range, Mr. Burt said, is much more desirable than that of the St. Paul and the Northern Pacific now has all the capacity needed, while even if the two lines were to be operated as double track, heavy capital expenditures would be required to effect the rearrangement of terminals. On the other hand, he said, the Cascade summit of the St. Paul line is more than 800 feet lower than the Great Northern's Cascade summit and its distance and grades between Seattle and Spokane are more favorable than the Great Northern's so that a combination of those lines would offer opportunities for operating economies, especially in view of the fact that with some small exceptions neither the Great Northern nor the St. Paul line west of Spokane has been developed beyond the capacity of a single track.

Howard Elliott, chairman of the Northern Pacific, replied to the statement previously made by President Budd of the Great Northern that the fact that the bond issues of the Great Northern and the St. Paul to mature in the next few years amount to over \$400,000,000 would practically prohibit a consolidation of those companies. Mr. Elliott showed that the maturities are spread over a number of years and that the extent of the refunding to be done in any single year would not exceed that of any important road. The bonds would have to be refunded anyway, he said, and their existence presents no insurmountable obstacle comparable with the importance of the great national question of how these roads should be grouped. Mr. Elliott said he was very much in favor of "having the Great Northern added to the Burlington-Northern Pacific group," because of the considerable saving and better service that could be effected, and that such a consolidation could be started very promptly and thus afford an example and an incentive to other roads if the authority were given by the commission.

J. G. Woodworth, vice-president of the Northern Pacific, discussed the subject from a traffic standpoint, saying that the Northern Pacific should go with the Burlington and the Great Northern and that a combination of the Northern Pacific with the St. Paul would be "a very great mistake." Such a combination would never be suggested by commercial considerations, he said, and would not be a natural one, at least not since the St. Paul has built 1,500 miles of line to the Pacific coast for the purpose of duplicating the Northern Pacific's line. According to his statement the proposed N. P.-C. M. & St. P. combination with the savings claimed for it by the Great Northern representatives would be impossible because of public protest against the elimination of competition in such an extensive territory and the curtailment of service which would be involved. He showed that the two roads occupy much the same territory and argued that such a combination would be opposed to the purpose of the law and to that provision which requires that competition shall be preserved as far as possible.

He also showed that the business of the Northern Pacific in the west is largely exposed to competition of the Union Pacific and that a connection, such as is now made with the Burlington at Billings, is necessary to the protection of that business, going so far as to say that a common control and management would be necessary to make successful competition possible, and to give the public the full benefit of competition. According to his statement, the C. B. & Q.-G. N.

combination would not be similarly effective on account of the circuitous route of the G. N. between Billings and Spokane, the distance being 275 miles longer than the distance via Northern Pacific. While Mr. Woodworth did not recommend a combination of the G. N.-C. M. & St. P. he pointed out the greater public benefits which would come from that combination, by reason of the large territory which is now served by the C. M. & St. P. and not served by the G. N., giving as example the Grays Harbor district which produces one-fifth of the lumber sawed in the state of Washington; he also stated that the Grays Harbor, Willapa Harbor and Peninsula districts, which are not now reached by the Great Northern, have one-fourth of the standing timber which yet remains in the state of Washington.

In describing the necessity for a common control of the N. P. and G. N. to provide a strong line via Billings to compete with the U. P., Mr. Woodworth described how the lumber operations are moving south from Puget Sound with a tendency to concentrate the business in the territory where the U. P. would have a great advantage should the N. P. be deprived of the C. B. & Q. connection. He called attention to the fact that most of the standing timber in the territory north of the California-Oregon line and west of the Rocky Mountains is in the state of Oregon.

Comparative Financial Strength

E. T. Dakin, assistant controller of the Northern Pacific, presented a series of exhibits to show the comparative financial strength of various systems to show, as he said, that no conditions can in any probability arise that would place a Milwaukee-Northern Pacific combination on an equality with a Burlington-Great Northern combination. For this purpose he used an adjustment of road and equipment figures to harmonize with the net railway operating income in each case. "These comparisons indicate," he said, "that whichever group should include the Burlington would be stronger financially and could earn a better return on investment than the group including the Milwaukee. Yet a Milwaukee-Northern Pacific combination would be, so much weaker both financially and as respecting return on investment than would a Burlington-Great Northern combination that it could not hope successfully to compete with the latter to an extent that would meet the requirement of the law that systems shall be so arranged that they may earn substantially the same rate of return upon the values of their respective properties. On the contrary a Burlington-Northern Pacific combination and a Milwaukee-Great Northern combination

would more nearly conform to the requirements of the statute. This fact is evident all through the exhibit. While the present capital of the Milwaukee-Great Northern exceeds that of the Burlington-Northern Pacific, still the excess is not nearly so great as that which exists on the Milwaukee-Northern Pacific as compared with the Burlington-Great Northern. The present fixed charges of the Milwaukee-Northern Pacific exceed those of the Burlington-Great Northern by over \$17,000,000, whereas the Milwaukee-Great Northern interest exceeds that of the Burlington-Northern Pacific by but \$8,300,000. If the Milwaukee-Northern Pacific had been combined in 1921 and had retained all business the roads had separately and had secured \$40,000,000 additional operating revenue, besides saving over \$10,000,000 in economies, then and only then could it have earned a rate of return equal to that of the Burlington-Great Northern."

Walker D. Hines, who as counsel for the Great Northern cross-examined the Northern Pacific witnesses, said he would want some time to examine the effect of the various adjustments made, but he pointed out that the tentative plan attempts to equalize some of these conditions by the inclusion of weak roads.

W. W. Sullivan, assistant to the president of the Chicago Great Western, filed an exhibit giving the basic data desired by the commission but said he had no suggestions to offer and that the company is willing to accept any plan proposed by the commission, providing the rights of the owners are fully recognized.

Freight Car Loading

WASHINGTON, D. C.

FREIGHT CAR LOADING during the week ended January 13 set a new high record for this period of the year, continuing the large increases over previous years that have been made for several weeks. The total was 873,251, an increase of 159,060 cars over the corresponding week of last year and of 157,396 over the corresponding week of 1921. Increases as compared with both the preceding years were shown in the loading of all classes of commodities and in all districts.

The freight car shortage had been reduced during the period ended January 7 to 73,285, which included 30,895 box cars and 34,243 coal cars. There was also a surplus of 20,426 cars.

REVENUE FREIGHT LOADED

SUMMARY—ALL DISTRICTS, COMPARISON OF TOTALS THIS YEAR, LAST YEAR, TWO YEARS AGO, WEEK ENDED SATURDAY, JANUARY 13, 1923

Districts	Year	Grain and grain products	Live stock	Coal	Coke	Forest products	Ore	Mdse L. C. L.	Miscellaneous	Total revenue freight loaded		
										1923	1922	1921
Eastern	1923	9,556	3,854	57,754	3,016	5,543	2,399	55,057	71,896	209,075	172,814	163,799
	1922	8,129	3,494	39,966	1,762	4,922	871	56,089	57,581	184,122	138,414	150,007
Allegheny	1923	3,362	3,210	54,247	7,014	3,531	2,407	42,762	67,589	131,837	108,129	96,261
	1922	2,493	3,403	42,825	3,428	2,470	1,248	40,315	42,232	114,167	98,689	96,261
Pocahontas	1923	210	98	20,076	488	1,397	192	5,818	3,558	31,837	30,353	29,145
	1922	244	75	20,863	197	1,124	22	5,168	2,650	29,853	28,866	28,866
Southern	1923	4,272	2,432	25,928	1,292	23,283	1,592	36,690	40,786	136,275	110,449	111,340
	1922	4,062	2,564	20,752	500	14,800	470	35,128	29,853	114,167	98,689	96,261
Northwestern	1923	16,206	11,159	11,212	1,415	17,813	1,016	25,218	30,128	131,832	110,449	111,340
	1922	15,748	11,158	9,665	986	14,199	353	23,541	23,039	131,832	110,449	111,340
Centralwestern	1923	12,123	13,813	23,651	432	6,857	2,514	30,293	42,149	131,832	110,449	111,340
	1922	13,842	12,668	19,812	229	4,526	860	28,866	29,646	131,832	110,449	111,340
Southwestern	1923	5,305	2,934	5,818	138	10,208	643	15,415	25,482	65,943	55,343	56,503
	1922	5,176	2,489	4,081	110	6,154	691	15,460	21,182	65,943	55,343	56,503
Total western districts	1923	33,634	27,906	40,681	1,985	34,878	4,173	70,926	97,759	311,942	264,481	264,104
	1922	34,766	26,315	33,558	1,325	24,879	1,904	67,867	73,867	281,588	264,481	264,104
	1921	51,034	37,500	198,686	13,795	68,632	10,763	211,253	281,588	873,251	714,191	715,855
Total all roads	1923	49,694	35,851	157,964	7,212	48,195	4,515	204,567	206,193	714,191	599,433	697,641
	1922	45,485	35,165	182,796	10,363	44,614	9,679	178,031	209,722	714,191	599,433	697,641
	1921	1,340	1,649	40,722	6,583	20,437	6,248	6,686	75,395	159,060	884,082	726,074
Increase compared	1922	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Decrease compared	1922	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Increase compared	1921	5,549	2,335	15,890	3,432	24,018	1,084	33,222	71,866	157,396	.....	.....
Decrease compared	1921	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Jan. 13	1923	51,034	37,500	198,686	13,795	68,632	10,763	211,253	281,588	873,251	714,191	715,855
Jan. 6	1923	45,498	31,686	187,746	13,028	57,530	9,718	182,840	242,257	770,303	599,433	697,641
Dec. 30	1922	45,931	26,188	173,378	12,108	44,913	8,175	177,624	222,983	711,200	528,556	528,556
Dec. 23	1922	50,802	30,934	181,325	13,243	58,696	8,941	217,256	273,394	834,591	666,605	666,605
Dec. 16	1922	51,004	39,148	198,510	13,226	60,102	10,748	224,450	290,884	884,082	726,074	726,074

Compiled by the Car Service Division, American Railway Association.

Gasoline Rail Car Shows Good Fuel Economy

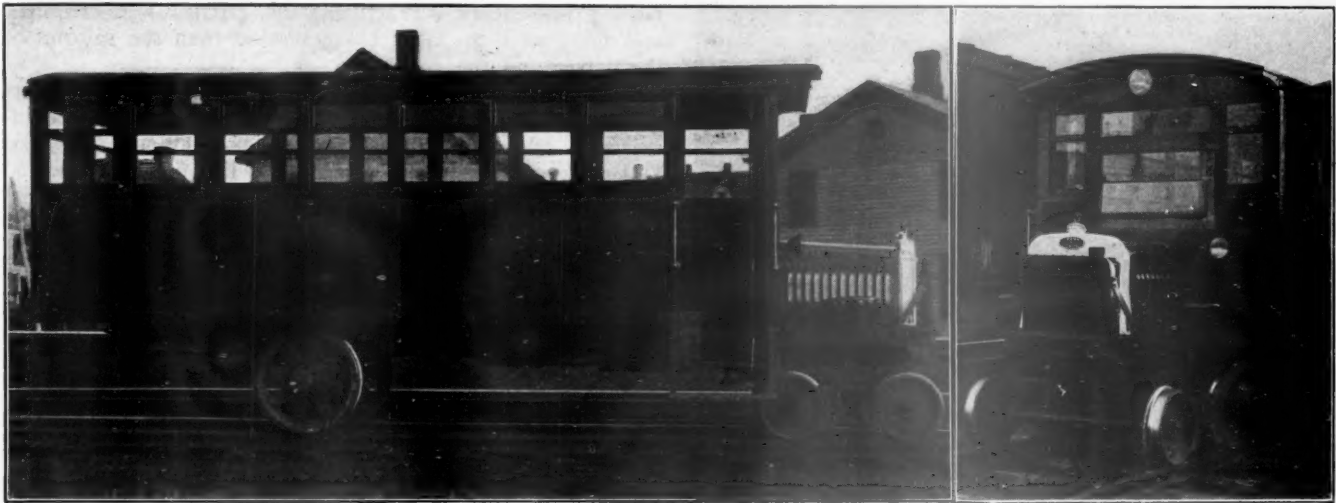
Passenger Rail Car, Built Around Gramm-Bernstein 3-Ton Truck Chassis, Averages 12 Miles per Gallon

ONE OF THE PASSENGER gasoline rail cars on the Middletown & Unionville is making what is believed to be the best record to date in fuel economy. This car averages well over 12 miles on a gallon of gasoline including a good deal of running about yards in low gear and reverse. The consumption of engine oil is from three to four gallons a month.

The car, shown in the illustrations, is built around a Gramm-Bernstein 3-ton truck chassis and, besides fuel economy, possesses a number of features of interest not usually found in railroad adaptations. This car was furnished by J. Blaine Worcester, Middletown, N. Y., who has been engaged in the conversion of motor trucks to rail uses for a number of years. Seats for 31 passengers are provided, these being Heywood-Wakefield cross seats with rattan

Reference to the close-up of the front of the car will disclose a number of interesting points. The stock headlights of the motor truck are retained; the low position of these lights gives a clean-cut view of the entire right of way and, with the larger overhead light, makes night running safe. The original fenders are left in place to catch dirt and oil that would otherwise be thrown on the body by the truck wheels; in this form, they afford ample protection without being in the way when inspecting or oiling around the truck, as is the case with the flat fenders usually put on such cars.

A U. S. Army type of radiator guard is standard on all Gramm trucks. It is a protection sorely needed in railroad work, the radiator always being in an exposed position and a slight accident to it putting the car out of commission. A radiator shutter, operated from inside the car and a shield for



Side and Close-Up Front Views of Gasoline Rail Car Which Is Giving Good Results on the Middletown and Unionville

cushions. The body was locally built, intended to furnish maximum capacity and strength without excessive weight. Exhaust heating provides for the comfort of passengers during cold weather. The chassis is assembled entirely from standard motor truck units or stock parts made in the Gramm factory, with the exception of the frame which is made extra long to accommodate the long body.

A Hinkley engine is used, of four-cylinder type with $4\frac{1}{4}$ -in. by $5\frac{1}{2}$ -in. cylinders. It is governor-controlled between 1,250 and 1,300 r.p.m. and the maximum speed of the pistons never exceeds 1,200 ft. per min. This results in prolonged life of all the wearing parts of the engine, in contradistinction from recent tendencies to run such engines at increasingly high speeds. Transmission gears have given considerable trouble in ordinary types of drive through drivers stripping teeth when changing speeds. In this transmission, there are no shifting gears and no bolts to loosen. The gears are always in mesh, and speeds are changed through rugged, four-jaw, positive-drive clutches. The transmission case is a heavy malleable iron casting with unusually well-proportioned bearings and shafts. The case is placed at the center of the car where it is far more accessible than when crowded against the engine, and such a location eliminates all possibility of the "whip" so common with long drive shafts. In this case there are two short shafts, one at each end of the case.

the back, are the means provided to obtain thermal efficiency under variable weather conditions.

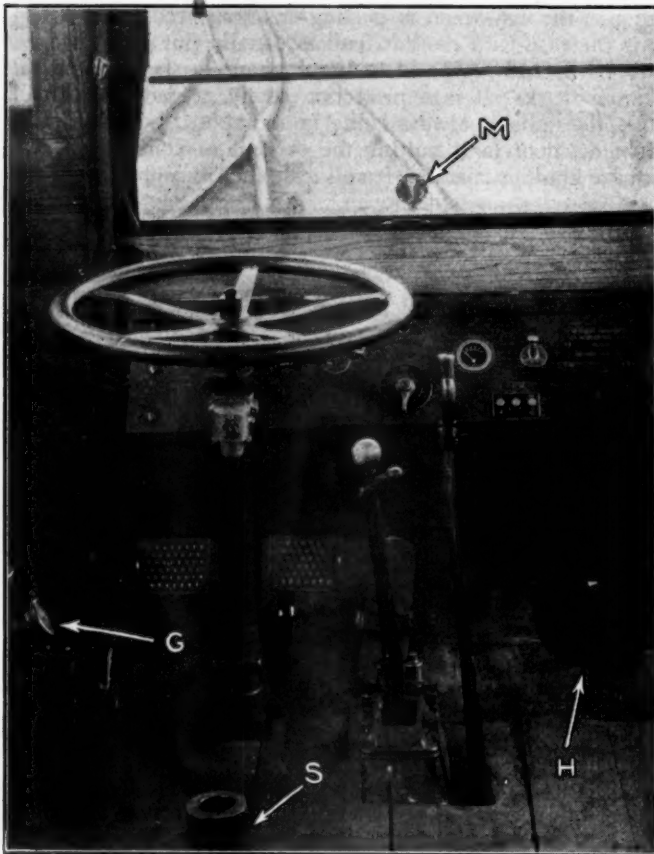
The leading truck is built up of shapes and has 2-in. axles running in Hyatt roller bearings. The bearings are mounted in oil and dust-proof housings, set in boxes, or cases, where they are free to swivel through a greater arc than ever required for track mis-alignment. M. C. B. type brake shoes and heads apply braking power to the front wheels by a novel arrangement. Three-inch I beams form the brake beams. At the center, these are spread apart by a block which turns with the center bolt. This in turn is moved by an arm at its upper end, receiving movement from the original steering arm over the left front wheels. Power from the steering wheel thus applies the brakes through an arrangement which is ready to act no matter how the truck may be swivelled on a curve. A hollow center pin within the center bearings permits the use of the center bolt for braking purposes.

The body bolster is fastened to the front springs by clips and takes the place of the axle of the motor truck. Spherical center bearings join the truck and body bolsters. Swing links are not provided and it is said that for a car of this size and weight they appear to be an unnecessary refinement as no uncomfortable lurching is noticeable at any speed. Worm-drive rear axles have not been extensively used on

gasoline cars but experience with this car indicates that they possess advantages in the way of durability and freedom from troubles besides the more theoretical advantages of smooth running and exclusion of dust. The reduction in speed at the axle is $4\frac{1}{2}$ to 1.

At the time the photograph of the side of the car was taken sanders had not been applied, but four sand boxes have since been installed under the car seats, and these deliver sand to both sides of the drivers. The driver controls the supply of sand by levers under his seat. Half-size M. C. B. type couplers are attached to the rear cross member of the frames of each of the gasoline cars on this road, and cars are frequently coupled together to form a two-car train, the rear car in either direction becoming the trailer.

Referring to the interior view it is evident that the driver



Interior View Showing Controls and Heating Arrangement

can obtain an unobstructed view of the track ahead. The convenience of controls and instruments is also apparent. To show the inside unobstructed, the driver's seat was lifted from its sockets, the floor covering turned back, and the screen removed from the large hole *H* in the foot board. Removal of this screen exposes the engine exhaust line, around which a sheet metal stove, or collector, is built, heating the air, which passes through a short pipe ending at the foot board and is delivered into the car body. Motion of the car carries the heated air where most desired and this method of warming the interior has proved satisfactory. Ammeter and oil pressure gauges are shown on the dash. The motometer *M* on the radiator top gives warning of an over-heated motor. At the extreme left is the gasoline gauge *G* connected with the 30-gal. tank.

Three brake connections are shown. The 18-in. wheel in front applies the front truck brakes. The right-hand foot pedal is the service brake on the rear wheels, and the long lever at the right is the emergency, or set, brake, acting on the rear wheel drums. Attached to the brake column, below

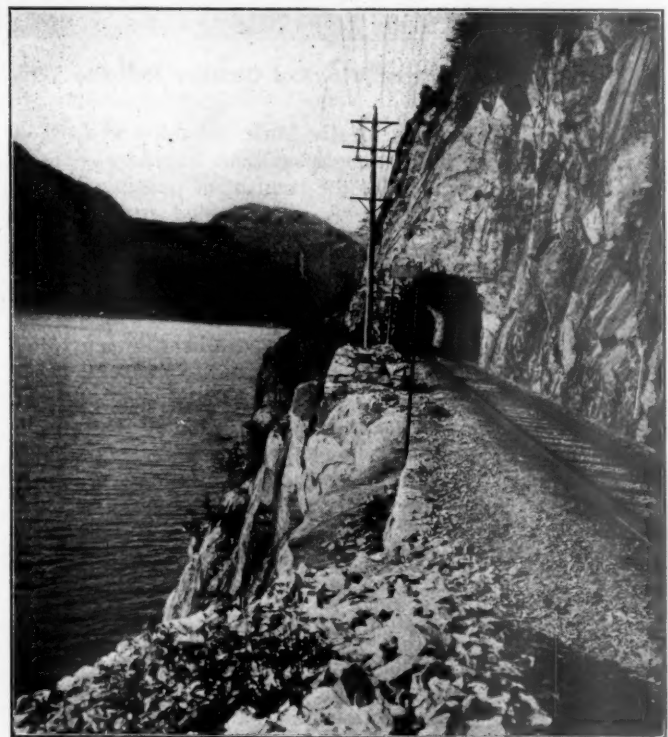
the wheel is the two-way switch, controlling the electric brake which is so connected to the service brake that either foot or electric power may be used.

The electric brake system used is that of the Automatic Electric Brake Company. It is not a magnetic brake. On making an application, a small current from the storage battery turns a motor connected to a screw which is, in turn, connected with a floating lever in the car's brake system. The brakes are applied or released almost instantly but if it is desired to leave them set, the switch handle is left in central position, when the brakes will stay on indefinitely. The holding power is that of a screw, hence there is no loss or leakage if the car is left with brakes set.

Conditions on the Middletown & Unionville are typical of those for which gasoline cars are installed. There are 15 miles extending from Middletown through a farming country with four small villages. The population is about 200 per mile. Shoppers and school children constitute a majority of the passengers carried. Bus lines have been run through the same region but the rail cars are slowly but surely starving them out. In November, 1922, the Gramm car made 107 round trips of 30 miles each. It consumed 251 gals. of gasoline in that time, making almost 13 miles to a gallon. There were carried in that time 1,981 paying and 198 non-paying passengers. Practically no repairs were required and there were no labor charges other than the salaries of the driver and the conductor.

November is a poor month for riding. Christmas shoppers more than doubled the traffic in December, but with no increase in operating expense except for gasoline. The past December was the most severe on this line of any in several years in the matter of sleet and snow and running under these conditions the gasoline consumption dropped to 10 miles per gallon.

The weight of this car, light, is 8,700 lb., or a dead weight of only 281 lb. per passenger. The maximum speed is 29 m.p.h. which the engine is able to maintain without distress on the heaviest grades on high gear.



On the Vosse Railway, Norway

Water Treatment Justified by Results Secured

Papers Presented Before Western Society of Engineers Demonstrate Advantages of Scientific Methods

THE ADVANCE in the art of water treatment and the progress being made in its application on the railroads were portrayed effectively in two papers presented before the Western Society of Engineers, Chicago, on January 22. The first of these was a paper by C. H. Koyl, engineer of water service, Chicago, Milwaukee & St. Paul, Chicago, who presented a general aspect of the subject of water treatment with special reference to results secured on the Great Northern and the Chicago, Milwaukee & St. Paul. The second paper, by W. C. Smith, mechanical superintendent, Missouri Pacific, St. Louis, Mo., related primarily to the form of organization set up on that road as a means of securing the greatest benefit from the installation of water treating equipment. Abstracts of these two papers follow:

Economics of Water Service for Railway Locomotives

By C. H. Koyl

Engineer Water Service, Chicago, Milwaukee and St. Paul,
Chicago

The average freight train costs about one dollar per minute to operate, of which the coal and the wages of the train and engine crew comprises 20 cents, the maintenance of the roadway, track and buildings 20 cents, the maintenance of locomotive and cars 40 cents, and the men employed along the line 20 cents. Knowing that the delay of a train cannot cost less than 20 cents per minute, let us consider the case of a regular water station out of water for one day, due to the breakdown of a pump or a pumping engine, the freezing of a river suction, the bursting of a pipe, or any other cause. The damage is principally in the delay to trains and it grows with the density of traffic. It varies from place to place according to conditions, but if the lack of water necessitates one engine cutting loose and running for water and thus causes one train to lose one hour, the immediate loss is \$14. If the trouble occurs where it delays ten trains one hour each, the immediate loss is \$120, and if it happens on a busy line with 30 trains per day, the immediate loss is not merely \$360 but probably three times that much from the tying up of traffic. The prevention of such losses depends on the eternal vigilance of competent attendants and, at specially important places, on duplication of equipment. A study of the probable delays in case of a breakdown will determine the justifiable expenditure for extra equipment for any water station.

In the matter of the location of these water tanks, the mistake is sometimes made of placing the tank in a sag because the creek is there. It costs a little more to run the discharge pipe up the hill and a little more to pump the water up the hill, but the extra cost is so small compared to the continuous waste of money in starting heavy trains from the sag that there is no justification for the practice.

Occasionally the use of water cars is urged as a substitute for an expensive water plant, because on nearly all railroads there are points, mostly on branch lines, where a supply of 20,000 to 25,000 gal. of water per day is necessary because of the distance to the next station on each side, but where water is so difficult to get that an equipment to supply even 20,000 gal. per day would cost as much as a large main line water station. No one feels like authorizing such an expenditure on a branch line with only one passenger train and

one freight train each way per day, and it is customary to run a water car on each freight train and sometimes an extra engine tender on each passenger train between the two nearest water stations on each side, say 50 miles apart. The cost of operating these water cars is usually considered a small matter because at worst each of them merely displaces one car on each train, but in such a computation many items are omitted. I have found the cost of such a water car equipment for such a branch line to be as high as \$800 per month in winter in the northern half of the country. In two cases I have had careful accounts kept of the cost of maintaining and operating such a set of water cars, one of which is as follows:

COST OF RUNNING WATER CARS FOR ONE YEAR

<i>Due to Shortage of Water at Two Adjoining Water Stations on a Branch Line</i>	
Cost of hauling water cars at 10 cents per car mile.....	\$6,221.60
Cost of extra switching at terminals.....	390.00
Maintenance of water cars.....	892.89
Equipping engines with steam heat and connections.....	300.56
Delays from filling cars and switching en route.....	972.90
Coal consumed en route and in stationary boilers, heating water cars	667.80
Delays to rotary snow plow account running for water.....	348.81
Total cost	\$9,794.56
3,110,800 ton miles used in hauling water cars for which revenue freight might have been hauled, had water cars not been necessary (at \$2.50 per 1,000 G.T.M.).....	7,777.50
Grand total	\$17,572.06

These figures show a cost of \$800 per month, or 16 cents per water-car-mile, if the water car does not displace a revenue car, and nearly \$1,500 per month, or 28 cents per water-car-mile, if the water car does displace a revenue car. In either case it costs more than the interest, depreciation and expense of operating two \$20,000 water plants. This is sufficient to show something of the value of a continuous supply of locomotive water at convenient points.

It Is Important to Consider Quality

But on the subject of water quality less is known although our experience is growing rapidly. The impurities in water which trouble boilers are principally three. In the coal mine country many of the streams are polluted with sulphuric acid which destroys the metal of the boiler; in the great central plain between the mountain ranges the waters of most rivers and practically all wells contain limestone in solution, which makes water hard and deposits scale in the boiler; in the country for a few hundred miles east of the Rockies, where rainfall is light and rivers are scarce, all well water is heavily charged with sodium salts and the sluggish streams and stagnant ponds are full of the products of decaying vegetation, sometimes acid and destructive of iron, and sometimes mere slimes which prevent the escape of steam in the boiler and cause foaming.

In 1870, long before there was a water treating plant in this country, the American Railway Master Mechanics' Association began a careful study of the greater cost of operating locomotives in a hard water district than in a soft water district, and in 1873 published the results. They found that between the average boiler of the soft water districts of New England and the average boiler of the plains there was an annual difference in the coal bill (at \$2.50 per ton) of \$340 per locomotive; in boiler repairs, of \$360, and in boiler cleaning, of \$50, or a total difference of \$750 per locomotive per year. The locomotive of today evaporates about four times as much water as the locomotive of 1870, so that these figures applied today would amount to \$3,000

per locomotive per year for extra washing, repairs and coal due to the use of average bad water. But the prices of coal and labor are higher now and it is probable that the average figures today are not less than \$4,500 per engine per year.

A fairly accurate comparison which was made four years ago between engines on the West Coast and on the plains showed an average difference slightly above \$4,000; so that it is reasonably safe to say that on any railroad the number of engines working in average hard water, multiplied by 4,000, will give the approximate number of dollars lost yearly in the items mentioned, for the want of suitable boiler water.

It is the experience also that, in addition to savings in coal and boiler repairs, there is marked improvement in economy of operation when boilers no longer leak on the road. A locomotive served with first-class water can do almost twice as much work per hour as when served with ordinary water, because, with a boiler which is likely to start leaking any moment, it is not wise to take a tonnage train nor to take chances on a close meet; while, with a reliable boiler, the chances vanish, and the engineman takes the load and makes the time.

On the Great Northern in 1914, a water treating plant was built at every water station on the main line in Montana for a distance of 420 miles. Because February is the hardest month for railroading in that part of the country, a careful comparison was made between the month of February, 1915, and the same month of 1914. It happened that the two months were much alike in weather. In February, 1914, the average load per train was 1,364 gross tons, and in February, 1915, 1,881 tons, an increase of 38 per cent; and the average running time over a division (including delays) had been cut down from 14 hours to 10 hours. When that is calculated, it shows that against 100 ton-miles in 1914, the same engines hauled 193 ton-miles in 1915, or nearly double the work.

The Saving from Water Treatment

Is \$1,000 Per Mile of Road

I was never able to compute the exact value of the improvement in service, but my best estimate was a saving of \$1,000 per mile of road per year where there was an average of 10 trains per day. That this is not too high an estimate is indicated by the following report from another road. In 1908, the El Paso & Southwestern abandoned deep well waters along 129 miles of track and supplied mountain water through a pipe line 180 miles long built at a cost of \$700,000. The report of the chief engineer states that in less than two years the pipe line was paid for by the savings on the 128 miles of railroad, which means a saving of \$2,700 per mile per year. The average of the original waters along that 128 miles was worse than the average in use by the railroads of the country and the mountain water which was substituted was better than the average treated water. But the illustration proves that the estimate of \$1,000 per mile per year is easily within bounds.

Some years ago the American Railway Engineering Association measured the damage done to locomotive boilers per pound of scale deposited from hard waters. It considered only repairs and fuel, taking no account of the time saved in washing or in turning engines in the roundhouse, or of the saving of time on the road. It measured the repairs and fuel of two similar engines, one fed with water seven grains per gal. hard and the other with water 21 grains hard, and the difference between them was considered to be the damage done by a water 14 grains hard. When this was divided by the number of pounds of scale deposited, it gave seven cents per pound of scale as the damage done in repairs and extra fuel. This was in 1913, when coal was taken at \$2 per ton and labor rates were low. At the prices of today the corresponding cost is 13 cents per pound of scale.

The Missouri Pacific, which has a long line of water

treating plants, reports annually in these terms and shows very striking savings. Other roads are engaged in water purification for locomotives, some of these quite extensively.

Recent Results on the Chicago, Milwaukee & St. Paul

In 1920, the Chicago, Milwaukee & St. Paul began the installation of water treating plants on the tracks east, west and south of Mitchell, S. D., where the water is very bad. We had had for some years a water treating plant at Mitchell, and one at Sioux City, and on the road had used all the anti-scale compound the boilers could carry; but in spite of all that had been done, the service was poor and expensive. On each engine district there were continuous boiler leaking and failures on the road every week; every boiler spent about two months in the shop every year, and averaged about \$2,000 per year in heavy boiler repairs.

It is now two years since the first of the new plants were put in operation. Since then not one of the boilers using treated water exclusively has gone to the shop for boiler repairs. Because a successful effort was made to reduce the careless use of coal on the road not all the coal saving can be attributed to the treated water and my only means of determining this amount is to deduct from the total saving a percentage equal to that on adjoining divisions.

It was noted quite early that, whereas the division of 678 miles was saving 4,000 tons of coal per month, the 130 miles which was completely treated was saving three-quarters of the total, and the 548 miles of untreated water only one-quarter of the total. It was remarked also that about half the water treated on this 130 miles of east-and-west line was taken by engines of north-and-south lines crossing it; so that the good accomplished by the treated water did not all show on the record of the 130 miles, nor even on this division, but on adjoining divisions. And since the north-and-south engines which took water also took coal, our record of coal saved on this section of road was probably not more than half of the coal saved by the water treated there.

Largest Economies Occur in Winter

As the months went by, we found that the winter savings were far in excess of the summer savings, evidently because, with untreated water, the boiler failures and delays along the road were much worse in cold weather than in warm. As against the previous year, the freight trains carried 100 tons more load, each, and there was saved an average of 60 lb. of coal per thousand gross ton-miles, which was about 25 per cent. More than half of this was saved during the winter and out of it an allowance must be made for the general saving along the line.

There was a marked improvement in the service and in its cost; but the strike disturbances of last summer destroyed the continuity of the record so that only a rough approximation can be made. On the 400 miles of treated water line the results were approximately uniform and the 130 miles referred to, running east from Mitchell to Sanborn was selected for close study. The figures given are what remain after making all reasonable deductions mentioned above for the general improvement in service which followed the return of the roads to individual control, and after separating the accounts of this 130 miles from the accounts of the division as a whole.

On the 14 engines operating on this line, at least \$28,000 per year is being saved in heavy repairs and at least \$12,000 in running repairs, or a total of \$40,000 per year in repair bills. On the same 14 engines, 600 tons of coal per month is being saved, which, at \$4 per ton, amounts to \$29,000 per year. This is a total of \$69,000 per year saved in repairs and fuel. The other savings due entirely to treated water amount to at least \$5,000 per month, or \$60,000 per year.

This makes a yearly minimum saved of \$129,000 due to

the change from bad boiler water to good on a strip of road 130 miles long, where the water treating plants which effected the change cost \$90,000 for construction and where the cost of treating the water is 12 cents per thousand gallons, or \$7,200 per year for the amount used on this part of the company's line.

In addition to improved service on that 130 miles, and a reduction of \$129,000 in operating expense, we have also released 3 of the 14 engines, whose construction cost was more than that of the water treating plants. And what is true on the 130 miles is true all over the treated water district. Water treating plants repay more than their construction cost in a few weeks by the release of engines and by increasing the speed and value of cars, and thereafter continue their good work by maintaining the efficiency of the rolling stock that is left.

Missouri Pacific Secures Excellent Results

By W. C. Smith

Mechanical Superintendent, Missouri Pacific, St. Louis, Mo.

The experience of the past year has demonstrated clearly and beyond question the great advantage of careful attention to the quality of locomotive boiler water supply. It is recognized that the question of proper water supply is an individual problem in each instance. The Missouri Pacific, after experience with many varieties of proprietary compounds and also soda ash, adopted a constructive program for the improvement of the quality of its water supply by the elimination of the largest possible amount of impurities before turning the water into its locomotives. These experiences are not intended as representing recommendations for universal practice, but are submitted as information and it is probable that they may prove of benefit in suggesting a method which has effected large economy and materially assisted in the improvement of locomotive operation and maintenance.

The Missouri Pacific system operates over approximately 7,500 miles of railroad. It taps nine states extending from the Mississippi west through the plains of western Kansas to the Rocky mountains and from the Missouri river south through the Ozarks of Arkansas and the bayous of Louisiana. The characteristics of the water supply sources vary from the best to among the worst in the country. Water supply problems include the handling of the coal mine waters in Illinois, the muddy waters of the Missouri, the gyp and alkali waters of the Kansas plains, the salt waters from oil fields and the soft soda waters from southern deep wells. With such variety in the quality of water supplies the marked difference in effect upon engine performance and operation was noticed early. Trouble from scale with consequent leaking and short life of flues and fire boxes on bad water districts was a problem of the first importance. Various compounds and soda ash were tried out as internal treatments, but in most cases they resulted in an increase in foaming and involved the road in such heavy expense for a careful follow-up system, that it was decided to place reliance on more careful and reliable methods.

First Plant Built in 1905

Complete water softening plants were first installed in 1905. The terminals at Little Rock, Ark., Kansas City, Mo., Hoisington, Kan., and Wichita and Pueblo, Colo., were equipped and a number of intermediate stations between Poplar Bluff, Mo., and St. Louis and Bush, Ill.; also between Kansas City and Pueblo, about 32 stations in all. A summary for the year 1909 developed the following: Water treated, 312,234,000 gal.; scale removed, 591,000 lb. Compared to 1905, there was a 44.7 per cent reduction in engine failures due to leaky flues, etc., and also a reduction of 33.3

per cent in boiler maintenance and consequent increase in net tons handled per mile.

In view of these results and the large return on the investment, an appropriation was made for 18 additional plants to be installed in the bad water district west of Kansas City. Up to this time, the entire supervision for all plants had been centered at St. Louis, but it was found that the distance severely interfered with the obtaining of efficient and regular results, so in 1910 traveling chemists with small laboratories were located at Kansas City and Little Rock, these being central and convenient headquarters. This arrangement worked out very well and excellent results were obtained.

In 1917, eight additional plants were installed on the district between Hoisington and Pueblo, which completed the treating equipment at all water stations on this territory. The results obtained were so definite and satisfactory that the district from Kansas City to Omaha was similarly equipped in 1919 and 1920. Since that year the development has been continuing steadily until there are now 81 softening plants (including nine soda ash plants) in service and six additional plants are under construction. Of the total of 81 softening plants in service, 36 are of the intermittent type and 45 of the continuous type. Hydrated lime and soda ash are used for the removal of objectionable matter in supplies, except at the nine soda ash plants where treatment consists only in the removal of the incrusting sulphates.

The cost of chemicals used in treatment varies from 1.2 to 13.3 cents per thousand gallons depending on the quality of the raw water; an average cost is approximately four cents. The total average cost of treatment, including cost of chemicals, operation of plant, depreciation and supervision is approximately nine cents per thousand gallons. Installation costs for plants will vary over a considerable range, from \$75 for the conversion of a roadside tank into a soda ash plant, to \$22,000—the cost of some of the patented softening plants now on the market. An average cost for installations in use on this system is approximately \$4,000.

Large Savings Effected

With the installation of six or eight more plants at some of the points of greatest consumption, it is expected that the quality of water on the Missouri Pacific will be very well in hand. Statistics for 1922 will show that there are 387 water stations in service. Approximately 7,000,000,000 gal. were supplied, of which 6,000,000,000 gal. were used for steam purposes. Of this amount, 2,400,000,000 was softened and approximately 5,000,000 lb. of scale removed which would otherwise have gone into the boilers, causing scale and its attendant troubles. It is estimated that a saving of 70,000 tons of coal was effected in 1922 by keeping this insulating coating from forming on the tubes and sheets. The saving in boiler maintenance, engine time and in reduced engine failures has also been very large. It is estimated that the net saving, after subtracting the cost of treatment, will be in the neighborhood of \$500,000, although the investment in treating facilities does not exceed \$300,000. The intangible benefits such as the improved morale of the forces and the greater reliability of the power are factors which have also benefited greatly by these facilities but cannot be reduced to dollars and cents.

The following may be of interest, as being largely attributable to water softening:

	Increased life of flues and fire boxes	Reduction in boiler work	Reduction in en- gine failures due to boiler troubles
Little Rock district.....	150 per cent	45 per cent	40 per cent
Kansas City district.....	200 per cent	55 per cent	30 per cent
Wichita district.....	300 per cent	75 per cent	85 per cent
Hoisington district.....	300 per cent	65 per cent	70 per cent
Falls City district.....	100 per cent	40 per cent	30 per cent

An interesting feature was brought out on our Colorado division which runs from Hoisington, Kan., to Pueblo, Colo.,

338 miles, and is divided into two engine districts at Horace. Before water treatment it was necessary to take out a "V" of flues every four to six months and clean out the scale, and to renew the entire set after 10 or 12 months' service. The flues in locomotive boilers are now run from 30 to 42 months. Instead of 1/4-in. scale on the flues when they are removed there is less than 1/16-in. scale. An engine running on one district could not work on another without several weeks of bad leaky troubles but engines are now operated through from Hoisington to Pueblo without any difficulty.

On the district between Kansas City and Omaha, we formerly experienced considerable trouble with leaky staybolts, making it necessary to hold an engine for staybolt inspection and repairs about three days per month. Since the complete treatment of water supplies was put into effect we have practically eliminated the leaky staybolts and engines can be returned to service in much less time.

As an example of water treating results for stationary boilers at our Sedalia, Mo., power plant, where water is treated for five Babcock and Wilcox double-deck water tube boilers of 275 hp. each, about 650 of the 840 four-inch tubes were in service 12 years, using treated water. The raw water here contains about 20 grains per gallon of incrusting matter or nearly three pounds per 1,000 gal. and with its use untreated, tube failures were frequent and the scale heavy and very hard.

Many such individual instances can be cited but it is probable that any other railroad, which has given careful attention to its water problems, can do likewise. In fact, although we cannot say our scale troubles have been eliminated, they have been materially reduced. Also although engine failures from leaking have not been entirely eliminated, it is a fact that they are becoming very rare.

A factor which must be given attention in the correction of water supplies is the matter of organization and supervision. The best and most expensive apparatus will not give results unless operated correctly and regularly. If a water treating plant is not run properly it is worse than useless. Not only is the investment a loss but expected results are not secured and the entire plan is discredited. Only by careful and systematic organization and by placing definite responsibility, can good results be secured. The methods which have been established and worked out for taking care of these facilities on the Missouri Pacific are as follows:

The water supply supervision is centered in the engineering department, an engineer of water service being placed in direct charge. Small laboratories in charge of traveling chemists have been installed at Little Rock, Kansas City and Osawatomie, Kan. Samples of both raw and treated water are sent from each treating plant to the designated laboratory on each Wednesday and Saturday where tests are made promptly and reports are furnished to all concerned. Any indication of unfavorable tests results in an inspection of the plant on the ground. The treatments are governed largely by the inspection of conditions in boilers and the chemical tests are made to assure water being maintained in a condition found to be most favorable. The traveling chemists in the course of their inspection, consult freely with operating officers, general and division master mechanics, roundhouse and boiler foremen and others interested and any complaint is taken care of without delay. The engineer of water service and general boiler inspector co-operate with each other and all concerned. In this manner water troubles are adjusted and minimized.

A point which is always brought up in a discussion of water treatment is the question of foaming. It is a fact that as a general rule when a water softening plant is put in service considerable foaming complaint results. This is also more or less true when an engine is transferred from one district with one quality of water to another with different water. In most cases, this trouble stops after a few

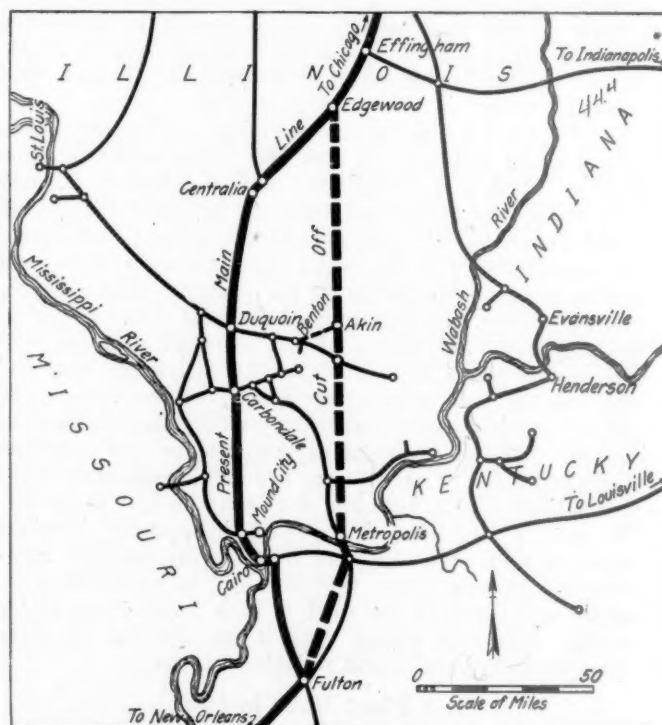
weeks. We have had some foaming trouble on the Missouri Pacific but with the use of an anti-foaming preparation, which is essentially a weak acid emulsion of castor oil made up by our chemical department, this trouble has been kept at a minimum.

The chief difficulty encountered with boiler waters at present is pitting and corrosion. The solution of this problem is still under study to determine the cause more exactly, but in this connection it can be said that while our present system of treatment has not eliminated this trouble, the improvement in conditions has been very marked.

In summarizing, permit me to emphasize again the importance of careful and conscientious study of water supply problems by a specially trained organization. This, together with close co-operation between the water service, operating and mechanical departments, will insure remarkable and satisfactory results and economies. Our experiences on the Missouri Pacific, where treating plants have been installed and properly supervised, have proven conclusively that these results can be accomplished.

Illinois Central Preparing to Build Big Cut-off

ONE OF THE LARGEST engineering projects undertaken by a railway in recent years is the construction of a new single track line by the Illinois Central from Edgewood, Ill., to Fulton, Ky., a distance of 168.6 miles. This line will be in the nature of a main line cut-off, shortening the distance between Fulton and Edgewood by 22 miles.



The Relation of the New Line to the Old

It will also afford a reduction in grades from a maximum of 1.2 per cent on the existing main line to a maximum of 0.3 per cent and in addition will eliminate heavy curvature. A distinctive feature of the line will be a tangent 60 miles long extending from Edgewood south to Akin, where a connection will be made through Benton with the coal mining district of southern Illinois. From Akin the line will extend

generally southward to Metropolis where the Ohio River will be crossed by means of the Metropolis bridge, in which the Illinois Central has acquired a joint interest with the Chicago, Burlington & Quincy and the Nashville, Chattanooga & St. Louis.

The project is primarily the culmination of efforts to relieve congestion on the existing main line, which crosses the Ozark mountains and runs directly through the southern Illinois coal fields, which are largely served by the Illinois Central. Although this line is double-tracked throughout with three tracks for a part of the distance, it is taxed to its capacity, the coal business originating in the vicinity and the consequent switching required having so increased as to interfere seriously with the movement of the heavy trunk line business, a large part of which is fruit and other perishables, requiring high speed movement. The new line eliminates the necessity of building additional third track, revising alinement and grades and improving terminal facilities, all of which it was estimated would cost more and be less satisfactory than the plan adopted.

A collateral feature which entered into the consideration of the new line was the desirability of providing a shorter haul for a large volume of coal mined in southern Illinois and moving to Chicago. The advantage of securing this shorter haul, it is estimated, in itself justifies the building of the new line from Akin to Edgewood. Another feature which also entered into the plan was the desirability of increasing the capacity and otherwise improving conditions on the line from Fulton, Ky., to Louisville, Ky., over which a heavy business is also handled. The new line will cost in the neighborhood of \$15,000,000.

Controversy Over Central Pacific Settled

WASHINGTON, D. C.

PRACTICALLY ALL OPPOSITION to the Southern Pacific's application for authority to acquire the Central Pacific was withdrawn when the case came before the full membership of the Interstate Commerce Commission for argument on January 19. Instead of presenting arguments on the merits of the case, which had caused an acrimonious controversy between the Southern Pacific and the Union Pacific, in which a large number of the shippers and business men's organizations and State authorities of the West had taken sides, the time was devoted to a discussion of the proposed conditions to be imposed in case the commission's decision is favorable to the application, which were submitted to the parties in the case in a letter from Chairman Meyer of the Commission on January 3, as reported last week. The Union Pacific announced its readiness to withdraw its opposition if these conditions were made a part of the order and a general acquiescence in this plan was expressed by all interests except the Oregon railroad commission, which is attempting to make use of this opportunity to secure the building of more railroads in Oregon by insisting on a condition in the order requiring the Southern Pacific to allow joint use over a proposed extension of the Central Pacific's line into Oregon, known as the Natron cut-off, to railroads that shall build across Oregon from east of the mountains in order to give them entrance into the Willamette Valley and to coast points.

The proposed conditions are designed to secure for the future complete equality of rates and service via the Central Pacific's Ogden gateway and the Portland and El Paso gateway, thus removing the Union Pacific's objection to Southern Pacific control of the Central Pacific on the ground that it would give the Southern Pacific an opportunity to subordi-

nate the Ogden route in favor of its Southern route. The Interstate Commerce Commission has not yet announced whether it will approve the Southern Pacific's application, but the discussion before the commission was based on the assumption that the commission would issue such an order subject to the conditions outlined. None of the representatives of the shippers that had testified at the hearing made an appearance at the argument, but their views had been expressed in letters and telegrams to the commission.

It is understood that the plan was proposed to the commission by the Southern Pacific after the assent of the Union Pacific had been obtained and it was then submitted to the various intervenors in the case in the form of the notice from the commission on January 3 that it had been suggested to it for specific consideration in case it decided favorably on the Southern Pacific application. Any order from the commission, however, will be submitted to the courts, as the Supreme Court has ordered a separation of the Southern Pacific and the Central Pacific under the Sherman law.

F. H. Wood, commerce counsel of the Southern Pacific, said that the Southern Pacific had seen most of the replies sent to the commission in response to the notice of January 3 and that their tenor appears to be general acquiescence in the suggestions except in a few instances where additional conditions or modifications of the conditions had been suggested and that he was prepared to say that the entry of an order under the conditions suggested would be acceptable to the Southern Pacific. Chairman Meyer said that a later telegram had been received from the Chicago Association of Commerce cancelling its previous telegram and stating that it is now in accord with the provisions of the commission's memorandum. Commissioner Potter said, however, that the previous telegram of January 16, which took the position that the plan had still left the possibility of Southern Pacific control of the Central Pacific being used to the detriment of connections other than the Union Pacific at Ogden and Salt Lake City, had left an impression on his mind that had not been removed by the second telegram and that he would not be willing to sign an order deliberately discriminating against the other lines. Mr. Wood replied that a similar objection had been made by St. Louis but that in his opinion the Central Pacific route would be open to all connections.

The replies indicate, Mr. Wood continued, that there is now no dissent to the proposal that the Central Pacific remain in the control of the Southern Pacific; the principal objection was that of the Union Pacific, which took the position that such control would deprive it of the rights it claimed under the Pacific railroad acts and would put it in the power of the Southern Pacific to subordinate the Ogden route in favor of the El Paso route, to the detriment not only of the Union Pacific but of other connections primarily dependent upon the Ogden route. The proposed conditions meet this objection by insuring equality of rates, time and service over these two routes, he said, because they completely protect the Union Pacific in its rights acquired by the Pacific railroad acts as well as the public interest in the Ogden route and prevent the Southern Pacific from subordinating the Ogden route in any way to the El Paso route. They are also designed to prevent the Southern Pacific from undertaking to neutralize the effect by solicitation to prevent the normal flow of traffic which would seek the Ogden route under an equality of opportunity. Mr. Wood added that of course the shipper is in no way deprived of his legal right to route his freight. That the plan is in the public interest as well as in the interest of the Southern Pacific and the Union Pacific is demonstrated, he said, by the attitude in which the public has received the proposal.

When Commissioner Eastman asked what would be the effect of a violation of any of the conditions Mr. Wood said that it would be within the power of the commission to withdraw its authorization and revoke the lease. Returning

to the suggestions made by the Chicago Association of Commerce, Mr. Wood said that the only other line involved is the Denver & Rio Grande and that it is admitted that the same time cannot be made via this route as via the Union Pacific, but there is nothing in the proposed order which would permit of discrimination against the Denver & Rio Grande or any other connection at Ogden or Salt Lake City and transcontinental rates are now and probably always will be the same via the Union Pacific and the Denver & Rio Grande.

On behalf of the Oregon commission, John E. Benton, general solicitor of the National Association of Railway and Utilities Commissioners, asked Mr. Wood how the plan takes care of the objection made by the Oregon commission. Mr. Wood replied that it does not take care of it at all. Mr. Benton then presented the position of the Oregon commission, which urges that a condition should be attached to the order requiring the Southern Pacific to allow joint use over the proposed Natron cut-off. Mr. Benton said that "the treaty of peace proposed and apparently agreed to seems to please everyone except the Oregon commission," and he described the large areas in Oregon "where the whistle of the locomotive is never heard" and through which the commission fears that east and west lines that have been proposed will not be built unless the Southern Pacific is compelled to give them joint use of its proposed north and south line.

Paul D. Cravath, appearing for the Missouri Pacific and the Denver & Rio Grande, said that both roads are deeply concerned in the Ogden gateway being kept open to all eastern connections but that they have been satisfied that such is the expectation and the purpose both of the Southern Pacific and the commission. He assumed that the commission would retain full liberty to deal with any question that may arise from time to time between the Southern Pacific and its eastern connections. He said that the protest formerly made by these companies was due to a misunderstanding.

F. W. M. Cutcheon, for the Western Pacific, also expressed entire agreement with the plan, saying the Southern Pacific had met its objections by promising to provide for joint rates and through routes to points on the Western Pacific on the same basis as to points on the Central Pacific.

H. A. Scandrett, commerce counsel for the Union Pacific, said that the Union Pacific had opposed the Southern Pacific application because its rights under the Pacific railroad acts and its interest in the Central Pacific route had been disregarded and because it felt that it would be a great menace to the Union Pacific in the future if the application were granted without conditions. The conditions proposed, he said, do not go to the full extent that would be justified by the Pacific railroad acts but are a substantial recognition of its rights and he was authorized to say that if the commission will grant the application with those conditions the Union Pacific would not only withdraw any objection but it would hope that the commission would under those conditions grant the application.

It is conceded, he said, that since the Supreme Court decision there is no control of the Central Pacific and it is the purpose of the application to acquire lawful control. It follows that the commission must pass on the application as it would if there were no control in fact. The commission would, therefore, in his opinion, be forced to the conclusion that the control could only be approved in such a way that the rights of the public as well as those of the Union Pacific shall be adequately safeguarded and that that is the function of the conditions. They only impose in specific terms upon the Southern Pacific the things that the law requires of the Southern Pacific under the Pacific railroad acts. They also meet in very large part one of the principal reasons why the Supreme Court condemned the Southern Pacific control, by providing assurance that the Southern Pacific will not sub-

ordinate the Ogden route to the El Paso route. They insure a co-operative effort of the Southern Pacific to work with the Union Pacific on traffic through the Ogden route, although the Union Pacific will still be met with the active solicitation of the Southern Pacific's connections from El Paso to New Orleans. While the controversy over the case had been quite acrimonious, Mr. Scandrett said, the parties on both sides except the Oregon commission say that the proposed plan represents a constructive conclusion of the entire problem and it seemed to him that the commission has an opportunity to dispose of a very troublesome problem in a very constructive way.

Mr. Benton then asked Mr. Wood why, since the Southern Pacific has promised to build the Natron cut-off if its application is granted, the public interest should not be protected by a condition in the order requiring it in the same way that the Union Pacific is protected; whether it is the intention of the Southern Pacific to permit entrance to that line by other roads from east of the mountains, and why that should not be required. Mr. Wood replied that there is now pending before the commission a petition from the Oregon commission for an order under Section 1 compelling the building of the Natron cut-off from Kirk to Oakridge and joint use by lines which it also asks to have ordered to be built across the "high desert" from Crane to Bend and from Bend to Odell on the Natron cut-off. The Southern Pacific is sympathetic with the desire of the people of Oregon for additional railroad facilities and the line has long been a part of its construction program and work had been begun north of Weed before the government instituted the dissolution suit, but the Southern Pacific had not believed the completion of the work, involving a cost of \$10,000,000, justified as long as its title to the Central Pacific was in jeopardy. By a formal resolution of its board of directors the Southern Pacific had declared its intention to proceed immediately with the completion of the project if its right to hold the Central Pacific is confirmed and the company regards that as a contract with the people of Oregon, but such a condition would not be germane to the purpose of the order and the company has not promised and does not think it should be expected to promise that other lines will be admitted to it as joint users. As no one has yet offered to build the proposed east and west lines which it is desired shall have joint use of the Natron cut-off line, he said, it is neither a rational nor a reasonable proposal to ask such a condition now.

If the commission enters the order, Mr. Wood said, it is the purpose of the Southern Pacific to submit it to the courts and it should be accompanied only by conditions which are germane, not loaded down with extraneous or unnecessary matter, and a condition in the order would carry no greater obligation regarding the building of the line than has already been incurred. He also pointed out that a new line can only be built after a proceeding before the commission involving an application for a certificate of public convenience and necessity, under Section 1, and the commission may not in this proceeding pass upon a matter which requires judgment under the other section. If the control of the Central Pacific is confirmed it will apply for such a certificate.

Mr. Benton replied to Mr. Wood's argument on this point insisting that the commission should protect the public interest of Oregon in the order. Max Thelen, of counsel for the Southern Pacific, pointed out that there was no evidence in the case to indicate that the Central Pacific if independent would or could build the Natron cut-off line and therefore that the line should not be made a subject of a condition in this case. Commissioner Meyer remarked that it had even been seriously proposed in a communication to the commission that a condition should be imposed requiring one of the parties to the case (the Southern Pacific) to take over the Orient road.

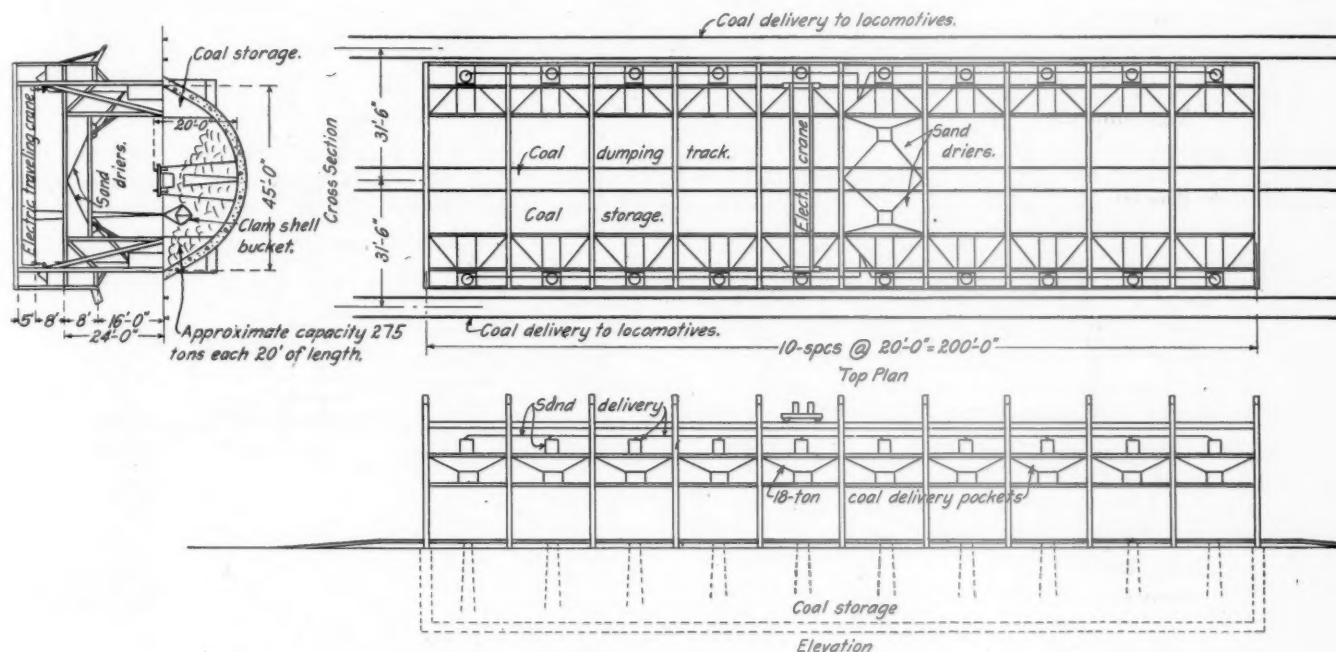
An Innovation in Locomotive Terminal Design

Rectangular or Circular Engine Houses with Inside Cinder Pits Designed for Promptly Turning Power

AS THE RESULT of extended studies of locomotive terminal operation, designs for engine terminals have been developed by the National Boiler Washing Company, Chicago, the special features of which are the inclusion of the ash-pit facilities at each stall inside the engine house. With these designs, which include the adaptation of the inside cinder pit to engine houses of the customary type as well as to houses of rectangular design, the plan of operation contemplates that the locomotive will be removed directly from the train to its track in the engine house by the road crew and that on outbound movements the road crew will take the locomotive from the house directly to the train. This method of operation, it is estimated, will

which it is pumped back into the service pit. From the storage pit, ashes are loaded into cars by means of a clam shell bucket operated from a monorail hoist or traveling crane, arranged to suit local conditions. The top of the trough is located at the elevation of the bottom of the engine pits and when not in use is covered with a movable cast iron plate so that the continuity of the engine pit floor is unbroken.

The desirability of including cinder pit facilities inside the engine house was suggested by operating studies of various locomotive terminals, in which all observations were made under good weather conditions. These observations indicate that at the average terminal handling 40 or more locomotives a day, about 3 hours 10 minutes is required to



National Coal and Sanding Station, Longitudinal Type

effect a saving of several locomotive hours consumed in intermediate engine terminal movements by each locomotive, a reduction in the amount of coal consumed by locomotives in the terminal, the elimination of hostler service and some reduction in the labor cost of cleaning fires.

As a part of its studies of terminal design this company has also developed a coaling plant in which the principal fuel storage is contained in a pit below the track level, to which coal is dumped directly from the cars and from which it is elevated to the service hoppers by means of a traveling crane.

As will be seen from the drawings, the cinder pit in effect is a large trough, 14 ft. wide at the top, located below and extending transversely to the engine house tracks, in which a stream of water, delivered at the upper end of the trough, is kept constantly flowing down the slope of the trough toward the end of the house. Provisions are made for washing down the sides of the trough at each stall during the time that a fire is being cleaned. As ashes are dropped into the pit they are washed down to an outside storage pit adjoining the end of the engine house, where the cinders and water accumulate, the latter to overflow into a sump from

house a locomotive after it leaves the train. The locomotive is first moved to the inbound terminal track by the road crew. This requires an average of about 20 minutes, after which the locomotive spends 30 minutes waiting for the hostler or because of yard congestion and similar causes, before it is moved to the coal chute. At the coal chute about 20 minutes is required to take coal, water and sand. There is then an average delay of 45 minutes between the coal chute and the cinder pit and the locomotive spends another 45 minutes on the cinder pit. It is then moved to the wood pile to receive kindling for the new fire. This movement and loading the wood requires a total of 10 minutes. Moving the locomotive to and waiting for the turntable consumes 15 minutes and 5 minutes are spent in moving over the turntable and into the house.

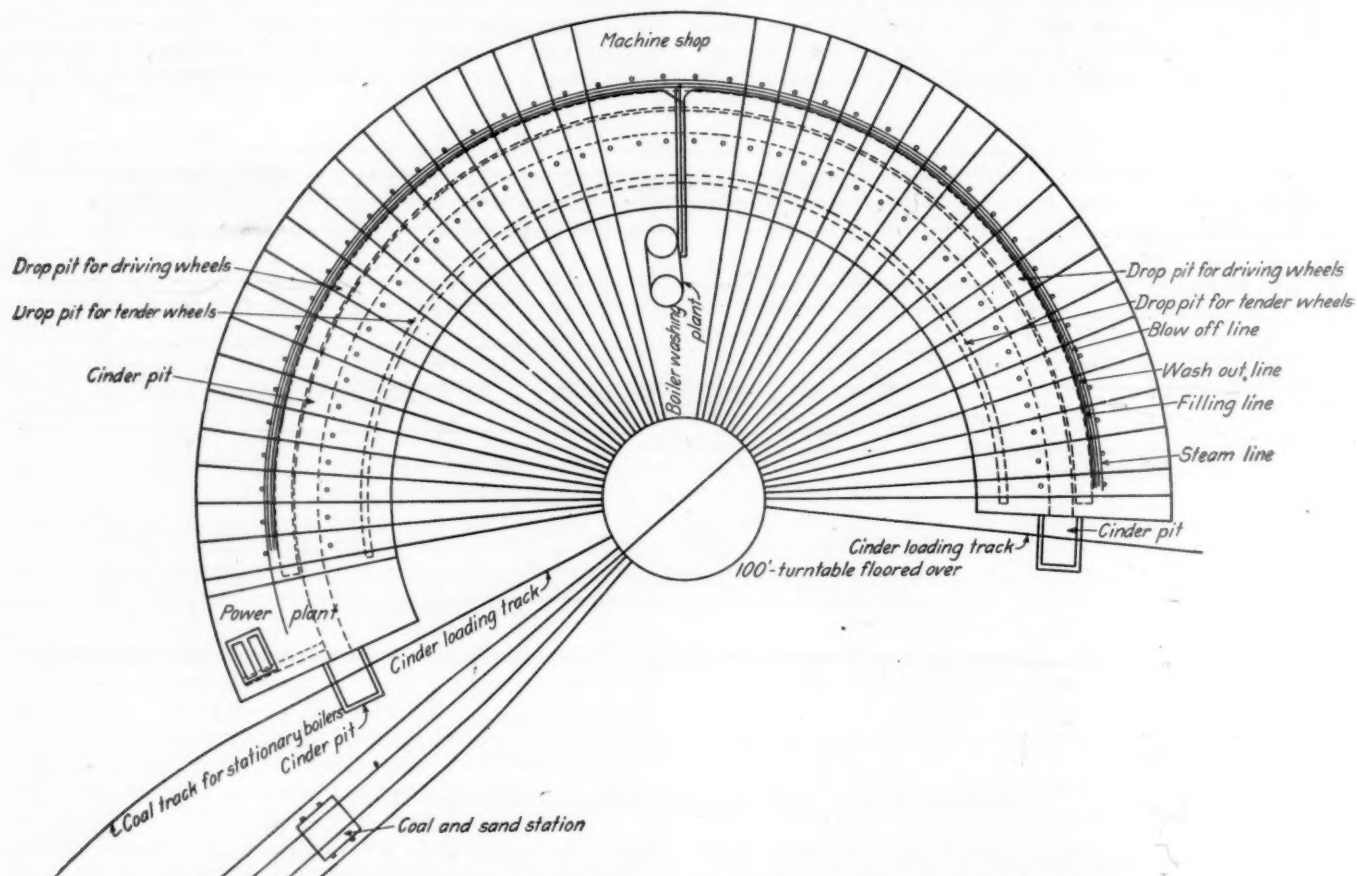
With the National Consolidated locomotive terminal it is anticipated that the locomotive may be moved by the road crew directly from the train to the engine house without intermediate delays in the same time that is now required to deliver the locomotive on the inbound assigned track in terminals of conventional layout. On the outbound movement the locomotive stops at the coal chute for coal, sand

and water. In all other respects, however, it is ready for its trip before it leaves the engine house, in the hands of the road crews, and this movement requires no delay other than the time actually required for service at the coal chute. An allowance of 30 minutes time to the crew is made for completing the movement from the engine house to the train.

Where terminals are unequipped with a hot water washing and filling plant an average time of 6 hours is required in the roundhouse to blow down the boiler and cool it by the customary process of gradually changing the water and to refill and fire up to 100 lb. steam pressure. Of this total, 4 hours is required in blowing down and cooling down the boiler, 30 minutes in refilling and 1 hour and 30 minutes in firing up to 100 lb. steam pressure. This ordinarily determines the time required in the roundhouse, as the running repairs generally can be completed well within this period.

duced from 9 hours 50 minutes to 4 hours 35 minutes, thus reducing the overall time from trip to trip by 5 hours 15 minutes.

In estimating the possible savings in the cost of turning locomotives through the National Consolidated locomotive terminal the field observations of actual operations at a number of existing engine terminals have been reduced to a basis of a terminal turning 42 locomotives a day, the equipment of which is typical of many comparatively modern engine terminals. The terminal includes no boiler washing plant and neither drop pits nor jib cranes are provided in the engine house. The coal chute is of concrete construction and the terminal is served by a wet type cinder pit and a motor tractor driven turntable. The turning of 42 locomotives per day includes blowing down and filling the boilers of 14 locomotives and washing out the boilers of seven



National Consolidated Locomotive Terminal Layout—Cinder Pit Inside of Round House

In the design of the National Consolidated terminal the inclusion of a boiler washing plant is contemplated, together with facilities at each pit for cleaning the exterior surfaces of the locomotive, inspecting the machinery and making running repairs. This work is all to be performed without moving the locomotive after it has been spotted on the engine pit. The facilities include jib cranes serving each two pits, and suitable drop pits arranged either continuously under all engine pits or under two or more adjoining pits, as local conditions require.

With hot water washing and filling facilities and with the ash pit facilities located inside the house, the time required for knocking the fire, blowing down the boilers, filling it with hot water and firing up to 100 lb. steam pressure is estimated at 3 hours 45 minutes, during which time the locomotive will be cleaned and inspected, and ordinary running repairs made. Comparing the two sets of conditions, the total time in the hands of the mechanical department is re-

duced from 9 hours 50 minutes to 4 hours 35 minutes, thus reducing the overall time from trip to trip by 5 hours 15 minutes.

Hostlers:	
9 men, 8 hours each, at 72.9 cents per hour.....	\$52.49
Coal Chute and Sand House:	
1 foreman, 8 hours, at 75 cents an hour.....	\$6.00
3 engineers, 8 hours each, at 57.25 cents an hour.....	13.75
3 laborers (sand dryer and coal chute), 8 hours each, at 43 cents an hour.....	10.32
Total	30.07
Cinder Pit:	
11 fire knockers, 8 hours each, at 43 cents an hour.....	\$39.60
1 crane operator, 8 hours, at 63.5 cents an hour.....	5.08
Total	44.68
Wood Pile:	
3 men, 8 hours each, at 43 cents an hour.....	10.32
Turn Table Tractor:	
3 men, 8 hours each, at 45 cents an hour.....	10.80
Blowing Down and Refilling Boilers:	
6 men, 8 hours each, at 52 cents an hour.....	24.96
Boiler Washing:	
8 men, 8 hours each, at 52 cents an hour.....	33.28

Fire Builders:	
6 men, 8 hours each, at 52 cents an hour.....	24.96
Total daily cost, turning 42 locomotives.....	\$231.56
Cost per locomotive turned.....	\$5.51

Under the method of operation possible with a terminal of the type in which all conditioning of the locomotives, with the exception of taking coal, sand and water, is done in the engine house, the labor costs of turning 42 locomotives a day, under the same conditions as are set forth above, are estimated as follows:

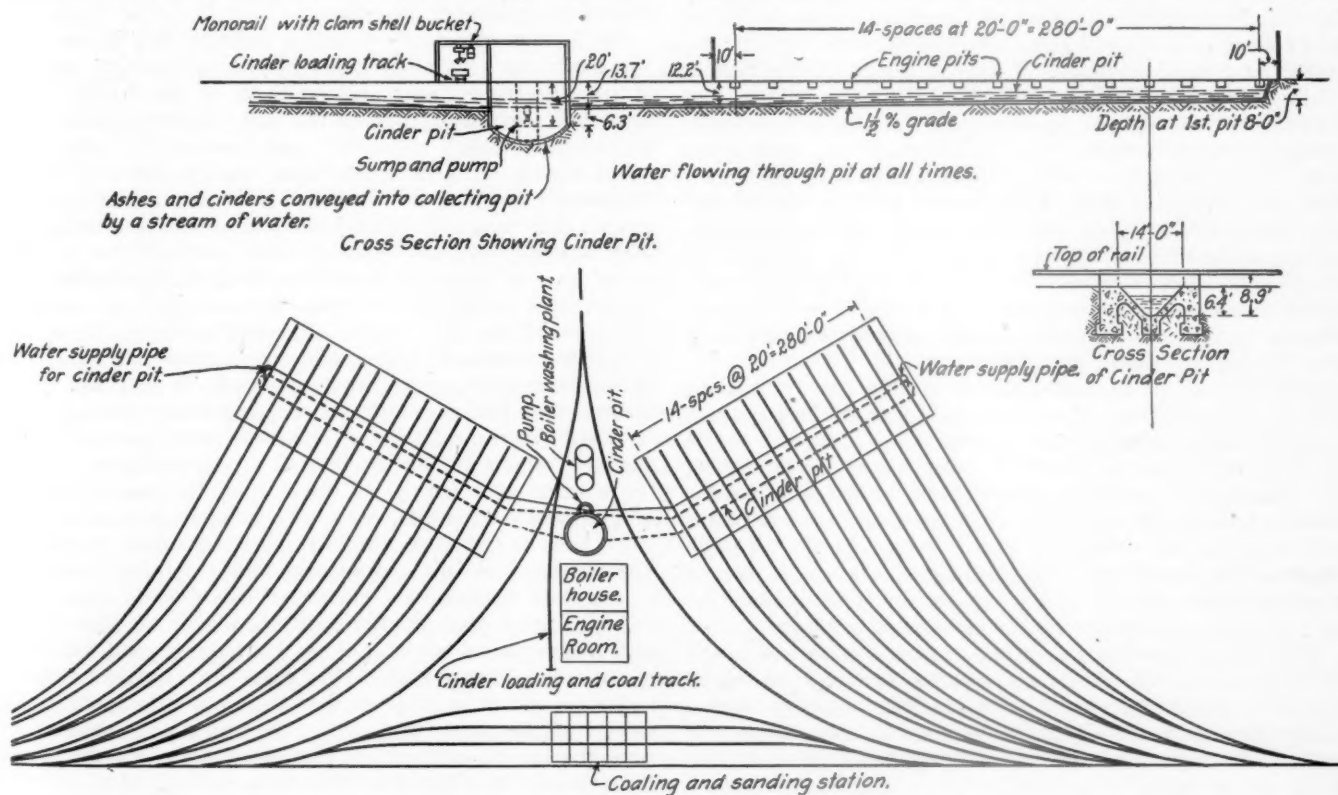
Hostler service (one-half hour allowed each engine crew).	
Freight enginemen, 21 hours, at \$1.16 an hour; freight firemen, 21 hours, at 88 cents an hour.....	\$42.84
Coal Chute and Sand House:	
1 foreman, 8 hours, at 75 cents an hour.....	\$6.00
3 engineers, 8 hours each, at 57.25 cents an hour.....	13.75
3 laborers (sand dryer and coal chute), 8 hours each at 43 cents an hour.....	10.32
Total	30.07
Cinder Pit:	
8 men, 8 hours each, at 45 cents an hour.....	28.80
1 crane operator, 8 hours, at 63.5 cents an hour.....	5.08
Total	33.88
Wood Handling:	
3 men, 8 hours each, at 43 cents an hour.....	10.32
Blowing Down and Refilling Boilers:	
4 men, 8 hours each, at 52 cents an hour.....	16.64
Boiler Washing:	
6 men, 8 hours each, at 52 cents an hour.....	24.96
Fire Builders:	
Four men, 8 hours each, at 43 cents an hour.....	13.76
Total daily costs, turning 42 locomotives.....	\$172.47
Cost per locomotive turned.....	\$4.11

The reduction in the number of fire cleaners included in the estimate of the number of fire cleaners required in the

water consumed in the terminal of over 53 per cent is estimated to be possible. This includes the saving effected by the use of hot water for washing and filling boilers as well as that attributable to the elimination of delays in the movement of locomotives through the terminal. Based on the turning of 42 locomotives, washing seven and blowing down and filling 14 boilers, all of which are fired up cold, the cost of coal in the average terminals of conventional design is shown in the table which follows:

COAL		Tons of coal per day	Cost at \$3.50 per ton
42 locomotives, 500 lb. coal each account delays between train and train	10.5		\$36.75
21 locomotives fired up, hot water and steam in boiler, 1,256 lb. each.....	13		45.50
21 locomotives fired up cold. Firing up, 2,574 lb. each. Coal for blower steam 1,754 lb. each. Total.....	45.4		158.90
Total cost fuel per day.....			\$241.15
WATER		Gal. of water per day	Cost at \$0.10 per M. gal.
7 boilers washed, 2,500 gal. each.....	17,500		1.75
21 boilers refilled, 5,000 gal. each.....	105,000		10.50
Total cost of water per day.....			\$12.25
Total cost of fuel and water per day.....			\$253.40

With the elimination of delays in the new terminal layout the fuel required to keep up steam pressure while handling the locomotives into and out of the terminal is saved. The water blown down from the boilers is used for washing boilers and the steam blown off forms part of the hot re-



Proposed Arrangement of Rectangular Engine House with Inside Cinder Pit

National Consolidated locomotive terminal is based on the ability to smooth out the peaks which occur at outside cinder pits because of their limited service capacity. With inside cinder pits a delay in cleaning the fire after a locomotive has been housed does not interfere with the operation of the terminal.

In addition to the reduced labor costs which is claimed for the new terminal layout, a saving in the cost of fuel and

filling water. Under these conditions the coal and water costs are estimated as follows:

COAL		Tons of coal per day	Cost at \$3.50 per ton
21 locomotives, hot water and steam in boiler, 1,256 lb. each	13		\$45.50
21 locomotives fired up, refilled. Firing up, 1,256 lb. each. Coal for blower steam, 877 lb. each. Total	22.2		77.70
Total cost of fuel per day.....			\$123.20

WATER		Gal.	Cost
		of water	at \$0.10
		per day	per M. gal.
21 boilers refilled (condensate and fresh water)	2,500		
gal. fresh water each.....	52,500		\$5.25
Total cost of fuel and water per day.....			\$128.45

This indicated a saving of \$124.95 a day in the cost of fuel and water in favor of the National Consolidated terminal, most of which should be credited to the inclusion of a hot water boiler washing plant. However, \$36.75 may be credited to the inclusion of the cinder pit inside.

The drawings show the application of the inside cinder pit in an engine terminal with the customary roundhouse and turntable layout and in a proposed rectangular engine house served by a wye in place of the turntable. The advantages of the latter arrangement are the saving in space inside the building permitted by the parallel arrangement of tracks, the ability to standardize the building design, so that it may be constructed in multiples of four-stall units and the lower cost of maintenance of the roundhouse leads and wye track as compared with the growing cost of maintaining turntables incident to their increasing length. The greater vulnerability of the turntable to accidents of a nature likely to completely tie up the terminal is also pointed out as favorable to the use of the wye. The arrangement of the terminal with rectangular houses shown in one of the illustrations is not intended to represent a standard form but is suggestive of what may be done with this type of layout.

Coaling Plant

In connection with this terminal design, a coaling plant has also been developed in which the main storage is carried in a concrete pit below the unloading track, which is approximately at ground elevation. A typical design of this type of coaling station is shown in one of the drawings. This is of the longitudinal type serving two engine tracks, with a single unloading track between them. This plant is a steel structure built in multiples of standard units each 20 ft. in length. For each 20-ft. bay, there is pit storage for 275 tons of coal and two service hoppers, one delivering to each engine track, having a capacity of 18 tons each. The steel structure is designed to carry a crane which travels longitudinally, with sufficient clearance between the top of the service hoppers and the bottom of the crane to permit the operation of a clam shell bucket for delivering coal.

The purpose of the development of this type of coaling station is to facilitate the rapid unloading of cars without the intermediate switching movements required at coal chutes of the elevator type, to provide a ready means for increasing the capacity of a coaling station without the necessity for the construction of a complete independent plant and the simplification of the design of the structure itself. A high degree of dependability is obtained by the use of an electric traveling crane and in case of emergency it is pointed out that the plant can be operated by a locomotive crane.

Where local conditions require a coaling station which will serve more than two tracks, a design has been worked out in which the crane, instead of traveling longitudinally over a single storage pit, travels transversely across two storage pits each 60 ft. in length and each serving two coaling tracks. Each coaling track has access to three service hoppers of 18 tons capacity each and the two pits, each 58 ft. wide and receiving coal from two unloading tracks placed 27 ft. from center to center, have a total storage capacity of 2,400 tons. Both types include sand drying facilities located at a sufficient elevation to permit the sand to fall into the dry sand storage by gravity, from which it is distributed by compressed air to the various service bins.

Patents have been obtained or applied for covering several arrangements of terminals, the application of the inside cinder pit to both rectangular and circular houses, and the coaling facilities just described.

I. C. C. Says State Commissions Are Essential

WASHINGTON, D. C.

THE INTERSTATE COMMERCE COMMISSION believes that the continued existence and proper maintenance of the state railroad commissions is essential to adequate railroad regulation under the present law, according to a letter written by Chairman Meyer of the federal commission to John E. Benton, general solicitor of the National Association of Railway and Utilities Commissioners, in reply to his request for a letter which he might be at liberty to use stating Mr. Meyer's view as to the part which state commissions now play under existing law in railroad regulation, and as to the necessity, or lack of necessity, for their continued existence, assuming the law as it now stands to continue unchanged. Instead of giving his personal opinion, Mr. Meyer said he had been authorized to express the commission's views. After discussing the changes in the law made by the Transportation Act and the authority given the commission to co-operate with the regulatory authorities of the states, Mr. Meyer said:

"But in following that method this commission deals only with the relationship of rate structures, state and interstate or foreign, a relationship which the Supreme Court has held to be within the province of Congress. In the absence of such defects in relationship this commission is not empowered to deal with the intrastate rates maintained by carriers who come under its jurisdiction because also engaged in interstate or foreign commerce.

"It is thus manifest that under existing federal law there are important regulatory fields embracing perhaps one-half of the passenger traffic and one-fifth of the freight traffic of steam railroads, as well as the bulk of the telephone service, which are left untouched and uncared for unless the states continue to maintain their own regulatory bodies, empowered to cover those fields. It is perhaps unnecessary to add that most state commissions have very important rate and security regulation jurisdiction over utilities such as water, gas, telephone, electric and local transportation companies over which this commission exercises no authority whatsoever. In our opinion the continued existence and proper maintenance of the state commissions is essential to adequate railroad regulation, assuming, as you ask us to assume, that the law as it now stands remains unchanged.

"Even in respect of the intrastate-interstate maladjustments to which the jurisdiction of this commission extends, the wisdom of avoiding its exercise, in the mutual interest of shipper and carrier, is now concretely recognized. As you know, on May 3, 1922, a joint committee comprising five members of this commission and eight representatives of the state commissions, sitting at Washington, formulated and reported a plan of co-operative action by the federal and state commissions, through joint conferences and hearings, in matters affecting both. This plan of co-ordinated effort, a copy of which is enclosed, has been put into operation in several appropriate cases. Thus the undeniably sound doctrine that in the domain of commerce there should be no state lines is in a fair way to become established in practice—a result obviously impossible of attainment without the existence and co-operation of state commissions."

In his letter to Chairman Meyer, Mr. Benton had pointed out that a movement was made in some states two years ago toward abolishing state railroad commissions upon the ground that the increased powers conferred upon the federal commission by the Transportation Act had rendered state commissions useless or practically so and he presumed that this idea would be advanced again this year in certain states. Therefore, he thought the commission's views on this subject would be of great value.

Partners in the Business of Transportation*

Giving the Employees a More Intimate View of Some of the Problems Confronting the Roads

By C. H. Markham

President, Illinois Central, Chicago

THERE ARE TWO important factors entering into the operation of a railroad. These are money and men.

I do not like to call them capital and labor, because those terms have been too greatly abused by misuse. At any rate, we have the owner and the worker, the dividend earner and the wage earner. One puts up the money that supplies the equipment and facilities, the other puts up the labor that operates the machinery supplied by the other. They are partners in the transportation business.

Each of the partners has certain rights and certain duties. One cannot pursue a course that hurts the other without in the end hurting himself. If the owner does not take a fair attitude on questions affecting the welfare of the employee, he suffers by creating an antagonistic, hostile spirit that injures the property and impairs the ability of the road to serve its patrons satisfactorily. If the employee does not take a fair attitude on questions affecting the welfare of the owner, he suffers by impairing the efficiency of the organization of which he is a part and retarding the development of the railroad.

Employees Received Advance, Stockholders Did Not

Many changes have taken place in the industrial world in the last 10 years. Living costs have increased materially. Rents and retail prices of fuel, clothing, food, and so on, have shot up, and these economic changes have resulted in substantial changes in the railway industry. In view of these changed conditions, consider how the two partners in the transportation business have fared.

You men are familiar with the increased rates of pay which shopmen have received during the past 10 years. In addition, the standard working day in railway shops has been shortened from 9 and 10 to 8 hours, safety devices and practices have lessened the hazard of injury, shopmen are given brighter, more cheerful surroundings in which to work, and they have better tools to work with. I believe this is as it should be.

The other partner has not fared so well. There are about 14,000 holders of Illinois Central stock, of whom a considerable number are also employees of the company. The average ownership per stockholder is about 80 shares. Ten years ago 80 shares of Illinois Central stock yielded a return of \$560 a year, and only the same return is now being realized, despite the fact that the owner, like the employee, has to meet the higher cost of living.

The great danger that lies in this inequality between the partners in the transportation business is that many investors have been discouraged by the meager returns that the railroads have been earning and have been driven to other markets. A prosperous railroad must constantly be adding to its equipment and facilities, for the volume of business offered the railroads is constantly growing and there must be a growth in the railway machinery to take care of the increased business that must be moved. When a railroad is unable to increase its facilities in keeping with the growth of business, everybody connected with transportation suffers. The shipper suffers because he cannot get promptly all the

transportation service that he requires for the proper conduct of his business, the owner suffers because the railroad is deprived of possible earnings, and the employee suffers because the railroad, being deprived of needed revenue, is not in so good a position to pay good wages and grant good working conditions.

It is the function of the management of a railroad to take the funds supplied by the owners of the property and the human energy supplied by the officers and employees, and turn out transportation service that will be satisfactory to the patrons of the railroad. In that position, the management represents three groups: It represents the owners—the employers; it represents the officers and employees of the organization; and it represents the patrons—the public. It must be duly considerate of the welfare of all three groups.

Management Represents Employees

as Well as Owners

There are times when you men may think of the management of the Illinois Central System as representing the owners, especially when you are unable to obtain everything you would like to have in the way of wages and working conditions. However, that is only partly true. The managing officers of this railroad do represent the owners of the property, but they also represent you and the public. While the management might like to grant all your requests for better wages and improved working conditions, it must be mindful also of the other two groups which it represents. Concessions granted at the expense of either the owner or the public would in the end militate against the employee.

For a railroad to be successful, there must be a unity of spirit and purpose in the organization that can only come through mutual understanding and good will. The management must understand and be in sympathy with the aims and aspirations of the employees, and the employees must understand and be in sympathy with the aims and aspirations of the management.

I want to tell you frankly that I believe in the fundamental principles of labor organization. Labor organizations that are directed along proper lines can be instruments of good, for the employees, for the owners, for the management, and for the public. However, anything that has in it the power to do good also possesses, if wrongfully directed, the power to do harm. This applies to labor organization. In the past, labor organizations have often been injured by poor leadership. A labor organization ought to inspire good craftsmanship. It ought to be of real service to the member who wants to get ahead in life, as well as to the member who is content to stay where he is. It ought to foster, not thwart, ambition. An organization that does not do these things is not a constructive, progressive organization.

The management of the Illinois Central System wants to co-operate with the employees, to work closely with them, to help them in every way it can. I have faith in our employees, faith in their honesty and integrity and their fairness, and I want them to have faith in the management—the kind of faith that is the product of mutual understanding. There are some people who are afraid that our country will

*Abstracted from a talk to the employees at the Burnside (Chicago) shops on January 12, 1923.

be destroyed by sovietism, bolshevism, or some of the other false creeds that are making a wreck of some European countries. I do not share that fear. I believe the great majority of our workers are loyal American citizens, who believe in American institutions, who respect property rights and believe in the principles that have made the United States the great country that it is today.

The Roads Have Been Misrepresented

There are some leaders in the railway labor organizations who are engaged in misrepresenting the railroads to their employees and to the public. I want to take one instance of this misrepresentation and show you how utterly false it is.

The charge that I am going to discuss is that the railroads of the country are vastly over-capitalized. "Watered" stock, say the agitators, is responsible for low wages to employees and high rates to the public. I am going to talk about the Illinois Central System, because that is the one railroad with which I am thoroughly familiar and because it is the railroad in which you are most greatly interested.

The capitalization of the Illinois Central System—that is, the total par value of all stocks and bonds outstanding in the hands of the public—is about \$388,000,000. The Illinois Central System operates about 6,200 miles of line or more than 10,000 miles of all tracks. Our capitalization, therefore, is approximately \$62,580 for each mile of line operated or about \$38,800 for each mile of track.

However, capitalization covers a great deal more than just the right-of-way, the ballast, the ties and the rails. On the Illinois Central System we have 75,000 freight cars, 1,800 locomotives and 1,700 passenger cars. Take our freight cars at \$1,000 each, our locomotives at \$30,000 each, and our passenger cars at \$15,000 each, or about half what we pay for such equipment now, then we have \$75,000,000 worth of freight cars, \$54,000,000 worth of locomotives, and \$25,500,000 worth of passenger cars—a total value of \$154,500,000 for rolling equipment alone. When we subtract this from our capitalization, we have left \$233,500,000, or about \$23,350 for each mile of track. Even this does not take into consideration the cost of bridges, signals, telephone and telegraph lines, buildings, land, roundhouses, shops and shop machinery, stations, and so on, which are included in the \$23,350 capitalization per mile of track that we have already arrived at.

In order to get a comparison, take the cost of building a mile of hard-surfaced road. Just a few days ago it was announced that the State of Illinois had received nearly 400 bids for the construction of 195 miles of hard-surfaced roads, only 15 miles of which involved heavy grading, and with only 12 light bridges being included. The average cost was \$25,518 a mile.

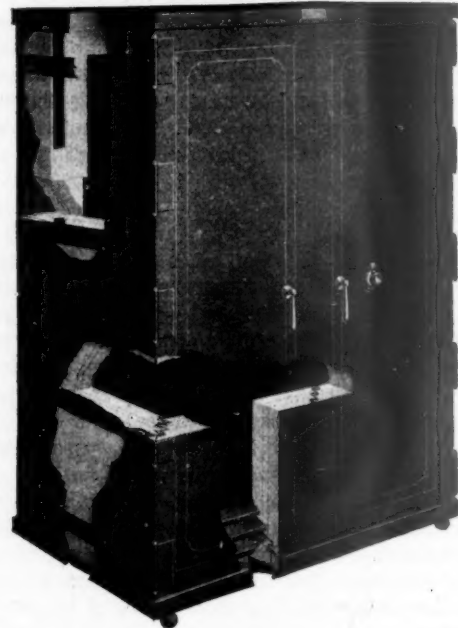
I am sure that any fair-minded person will have to agree that since it costs the State of Illinois more than \$25,000 a mile to build an ordinary hard-surfaced road, under those conditions, an average capitalization of \$23,350 for each mile of track, including far more than merely the roadway, shows clearly that the Illinois Central System, instead of being over-capitalized, is considerably under-capitalized. The charge of "watered" stock, as it applies to the Illinois Central System, is wholly untrue, and I believe you will find similar conditions on many other railroads.

We are all fellow workers. Each of us has his particular part to play, and our success collectively, as an organization, depends upon how each and every one of us performs the task that is his part. Do not think that your particular job, whatever it may be, is of little importance to the railroad. Remember always that the strongest chain that can be forged is only just as strong as its weakest link. The efficiency of a great trip-hammer that delivers a blow of many tons may depend, as you very well know, upon a tiny

set-screw, a drop of oil, or a strand of packing in a valve. Never lose sight of the fact that, no matter what your particular task may be in the great, intricate, often complex machinery of the railroad, it is an important task. The spike that holds a rail to the tie or the bolt in the fishplate is just as essential to the safety and comfort of the traveling public as the locomotive that pulls the speedy limited train.

The GF Allsteel "A" Label Safe

A SAFE TO GIVE greater protection to its contents in case of fire has recently been placed on the market by the General Fireproofing Company, Youngstown, Ohio. In addition to more insulation, the safe has been strengthened to give greater protection against breakage in case of fall. A phantom view of the construction of the safe is given in the accompanying illustration, which shows how the insulation is reinforced, i. e. molded around a heavy steel framework. Other features designed to give the greatest strength are added flanges to the doors, extra hinges and lock reinforcement.



Phantom View of the GF Allsteel "A" Label Safe

ments of cyanide-hardened steel. The safe has been designed primarily to protect records and valuable papers from fire and as such is of interest to railroads which must keep great quantities of these records and which, moreover, suffer frequent losses of such records from fire.

This safe is given a "Class A" label by the Underwriters Laboratories, which indicates its ability to undergo severe tests of strength and resistance against temperatures as high as 2,000 deg.

MORE DOLLARS are being squandered in permitting big trucks to destroy serviceable roads every year in the United States than are being put into new construction and yet we say we are trying to solve our road problem. That is the way we are trying to solve it, by getting less miles of useable road at the end of every year than we had at the beginning of that year. I maintain that it is not solving it and it cannot solve it.—From an address by John N. Mackall, chairman, Maryland State Road Commission at the fifteenth annual conference on weights and measures, Washington, 1922.

P. & R.'s 1922 Operating Net Ahead of 1921

Shop Employees Did Not Strike and Expenses Were Held to Normal—Traffic Cut by Coal Strike

IN SPITE of the complete cessation of the anthracite coal traffic between April 1 and the middle of September and the very substantial reduction in bituminous coal tonnage, due to the coal strike of 1922, the Philadelphia & Reading will come through the year with a net railway operating income better than that of 1921 and with the best figure of net income which it will have reported since the beginning of the federal control period. For the first 11 months of 1922 the Reading operated at a ratio of only 77. Its net railway operating income for this period was \$12,600,037, which compared with \$10,410,538 for the first 11

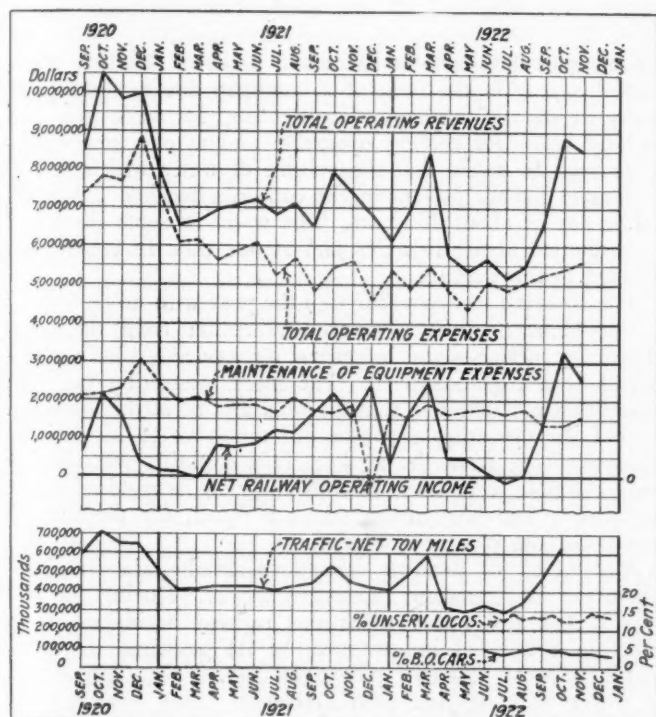
sults on that road's net income due to the combination of the cessation of anthracite tonnage and the increased maintenance of equipment expenses arising from the strike. The Reading had the same cessation of anthracite tonnage. Its shop workers, however, are affiliated with the American Federation of Railroad Workers and not with the American Federation of Labor. The worst that the nation-wide strike of the shop workers brought about on the Reading lines was the withdrawal from the shops of about 300 shop employees at the most at any one time. As a result, the railroad was able to maintain its equipment in its usual good condition and the operating expense accounts show no costs resulting from the measures taken to fight the strike, to train new employees, etc.

Excellent Equipment Conditions

The Reading for some time has been reporting unusually favorable equipment conditions. The highest percentage of bad order cars that it reported in the second half of 1922 was only 5.3 per cent on August 15. At present even this abnormally favorable figure has been further reduced to 3.1 per cent, which is about the lowest figure to be reported by any railroad in the United States. It is of interest, further, that at the present time the percentage of home cars held for repairs is 2.5 per cent, which figure is so low as to be remarkable. The per cent of locomotives held for repairs requiring over 24 hours has been much below the country's average for a considerable period. On January 1 the percentage was only 12.7. The highest figure which has been reported since July 1 was on July 15, and the figure on that date was only 15 per cent. Further than that, the Reading very wisely ordered 2,000, 70-ton coal cars, the contract for these cars being signed at a time when there were some 10,000 coal cars stored at various points on the system. The new cars were received at just about the time the coal traffic was restored, with the result that the Reading was placed in a very advantageous position from the standpoint of car supply following the end of the strike. Twenty-five heavy Consolidation locomotives purchased in similar manner have likewise greatly assisted the company's operations.

Carries More Bituminous than Anthracite

The Philadelphia & Reading is the country's largest carrier of anthracite. It carries, in addition, considerably more bituminous coal than it does anthracite, the proportion of anthracite to bituminous in a normal year running, roughly, about 3 to 2. The combined tonnage of anthracite and bituminous normally constitutes, roughly, about 60 per cent



Note: Maintenance of equipment expenses in December, 1921, were reported as \$314,581 in red due to a credit of \$2,159,932 representing adjustment of 1920 accounts.

Philadelphia & Reading Traffic and Earnings

months of 1921 and with \$12,805,667 for the whole year 1921.

Of course, 1921 was not a normal year. What a normal year should be is best reflected in the fact that the standard return for the property during the period of federal control was roughly \$16,000,000. Nevertheless, the improvement in earnings in 1922 as compared with 1921 is of great interest, particularly in view of the decreases in traffic which resulted from the coal strike. That the Reading was able to effect this increase in net and to continue the improvement which it has been showing since its net operating deficit of \$655,107 in the year 1920, was due to the fact that it had no shopmen's strike. It will be able to show for 1922 the best net railway operating income of any of the anthracite carriers and its record will be very much in contrast with the poor results which the other anthracite roads are expected to report.

In last week's issue of the *Railway Age*, in an article entitled "Delaware & Hudson Will Maintain Dividend," some details were given showing the extremely adverse re-

TONNAGE OF FREIGHT CARRIED BY THE PHILADELPHIA & READING
(Tons of 2,000 lbs.)

Year	Anthracite coal	Bituminous coal	Merchandise	Total
1917.....	16,239,859	22,549,852	32,548,033	71,337,745
1918.....	16,277,781	24,078,596	30,918,224	71,274,602
1919.....	13,815,371	23,320,574	26,074,519	63,210,464
1920.....	15,121,124	24,875,761	29,716,679	69,713,564
1921.....	13,834,398	17,433,809	18,695,337	49,963,544

of the road's total traffic. It is interesting to bear in mind that the Reading's development in its earlier years was as an anthracite carrier almost exclusively, but that in more recent years the growth in the tonnage of bituminous coal and of merchandise traffic has brought about quite different conditions although it still remains true that the Reading is

the largest carrier of anthracite coal, the greater volume of which it receives from its related company, the Philadelphia & Reading Coal & Iron Company.

Speaking rather generally, there are four outlets for Reading anthracite. The most important of these is the extensive terminal at Port Richmond on the Delaware river near Philadelphia. Another one is the similar, although somewhat less extensive, development at Port Reading near New York. A considerable volume of the anthracite tonnage is turned over to the Central of New Jersey for movement via Allentown, Phillipsburg, the Lehigh & Hudson River and the Poughkeepsie Bridge route into New England. Some coal is also given to the New York Central at Newberry Junction for movement westbound. A considerable volume is, of course, delivered to Reading territory generally.

The bituminous coal originates primarily at mines on the Baltimore & Ohio whence it moves via Cherry Run and the Western Maryland or via Martinsburg and the Cumberland Valley. The Reading maintains a joint service with these two roads whereby engine crews run from Rutherford yard, adjacent to Harrisburg, via Shippensburg to Hagerstown or to Martinsburg. This bituminous coal is moved over the Reading rails to Port Richmond, to Port Reading, or is turned over to the Jersey Central at Allentown as is the case with anthracite. Some bituminous coal is also received from the New York Central at Newberry Junction. The industrial areas in the Reading's own territory also require, of course, a considerable volume of the bituminous.

The purpose of the terminal development at Port Richmond is to take care of the anthracite and bituminous tonnage which is destined very largely to New England. The Reading maintains a fleet of 11 ocean-going tugs and of about 75 barges of from 1,000 to 3,000 tons capacity and the coal is moved by this fleet to Boston and neighboring points and even as far north as Portland, Me., Searsport, Bangor, etc. The Port Reading development supplies New York harbor and there is a sizeable movement to the ports on Long Island sound. Out of Port Reading the P. & R. operates four tugs only, these being required to move coal into New York harbor from which it is towed by other companies to points beyond. At Port Richmond, also, the Reading has a large grain elevator, grain constituting a considerable portion of total P. & R. merchandise tonnage. This grain is secured primarily from the New York Central at Newberry Junction for movement to the Philadelphia district. Some grain moves also to Baltimore, in which case it may be delivered to the Western Maryland at Gettysburg.

Traffic Cut by Coal Strike

The Reading's three best months in the first 11 months of 1922 were March, when coal was moving in anticipation of the coal strike, and in October and November, following the restoration of coal operations. In October the company reported a net railway operating income of \$3,288,631 which made October the best month that the Reading has been able to report for at least three years. In October the operating ratio was only 60.9. The poorest month was July. That month was the only one in 1922 in which the railroad reported a net railway operating deficit. That deficit amounted to \$192,512 and the operating ratio was 94.5. The trend of traffic movement during the year is shown on the chart which is reproduced with this article and in the following figures of cars loaded and received from connections:

CARS LOADED AND RECEIVED FROM CONNECTIONS

January	141,718	July	141,722
February	156,887	August	156,594
March	190,161	September	177,594
April	138,793	October	219,115
May	146,576	November	211,092
June	155,178	December	209,944

These figures are of interest from several points of view. First of all they indicate the large volume of traffic which moved in March prior to the beginning of the coal strike

and the sharp decrease in business which resulted from that strike. From April on the Reading moved no anthracite at all. It was, however, favored with a fair volume of bituminous coal received from such sources of supply on the Baltimore & Ohio as continued operation and there was also a fair movement of Pocahontas coal from Norfolk & Western territory which reached the Reading rails by Hagerstown and the Cumberland Valley. Throughout the summer there was also a gradual increase in the volume of merchandise traffic. The coal mines resumed operations in the early and middle part of September with the result that October gave the Reading the best traffic which it has moved since the peak of 1920, this result being brought about by the combination of a good anthracite traffic, a good bituminous movement and the grain and merchandise traffic generally.

The Reading at present is handling practically its normal anthracite tonnage. Its tonnage in October was 1,266,092; in November it was 1,224,990, and in December, 1,259,927. Mention has already been made of the fact that there were available for the October and November traffic 2,000 new 70-ton coal cars and 25 new heavy Consolidation locomotives. This new equipment assisted operation very materially. An unusual development has taken place in Reading activities this year in the form of a handicap due to shortage of water in the coal regions. The Reading for some time had to haul water for colliery operation and at one time conditions were so severe that the volume of water which had to be hauled for the boilers in the collieries reached 2,000,000 gal. a day or about 200 cars. The water in some cases had to be hauled about 30 miles and at one time 18 crews were devoted to this service.

The Reading has come through the year with no embargoes at all—wherein it is a marked exception from the other anthracite carriers—and in general its service has been maintained at a high standard. The most interesting point in connection with the fact that the road had no strike, however, is that the operating expenses did not have to include the costs resulting from the strike. This explains wherein the road was able to realize so handsomely on its restored traffic in October and November and as a result, for the first 11 months of the year as a whole.

Any review of Reading operations should take into consideration its important passenger service. During the last year it had two rather disastrous railway accidents. It is effecting a decided improvement in its passenger facilities in the form of 150 new passenger cars, a large proportion of which have already been delivered. This total has included 50 cars for through and 100 for suburban service.

In this analysis reference has been omitted of the segregation plan which is now being considered and which calls for the partition of the railway and coal mining operations of the parent Reading Company. The company that is being segregated is the Reading Coal & Iron Company. All of the capital stock of the Philadelphia & Reading Railway Company is owned by the parent Reading Company. The segregation plan calls for the Reading Company to be maintained as the railway company. The point might well be made that the Reading Company, after the segregation plan is carried out, will be the owner of a high grade railroad.

Even with the reductions in its traffic which took place in 1922 the Philadelphia & Reading has come through with what may well be termed a rather successful year. With the general revival of business conditions it bids fair to show extremely good operating results for 1923. A point that is of first consideration is the fact, of course, that the company has had to write off no strike costs and that it starts the year 1923 with its equipment in an unusually good condition, which situation should be reflected in low maintenance of equipment expenses. This point is emphasized because to this extent the Reading may prove something of an exception from many other railroads.

Centralized Freight Car Ownership Undesirable*

Handling of Coal and Distribution of Cars Under Car Service Division Produces Best Results Practicable

By Donald D. Conn

Manager, Public Relations Section, Car Service Division, American Railways Association

THERE ARE THREE SUBJECTS of extreme importance which now confront the public in its relationship to the railroads of this country:

First: What part do the railroads play in effecting a successful solution of our coal supply problem?

Second: The recommendations which have been made for the creation of a central agency to pool and finance the freight car equipment of the country.

Third: The crystallization of public thought on the future of transportation.

Railroads and the Coal Situation

Regarding the coal situation: Much has been said during the past three months in the public press and by the mine unions as to the responsibility of the railroads for coal strikes and coal shortages, hence certainly it is timely to give you some facts regarding the relationship between the railroads and coal supply.

Manifestly, it is economically unsound and contrary to the very principles of our institutions that the relationship between such an essential business as the coal industry and the public cannot be finally and definitely fixed without the continual resorting to Government investigations and legislative enactments, together with the constant usage of its priority prerogative, which always disturbs the free production and movement of commodities. So much has been said about what the railroads have or have not done, that I want to give you the following facts and let you judge for yourself as to whether or not they have played their part in meeting the demands of the public for this commodity.

You will recollect that the coal miners' strike of 1922 had its inception on April 1 and continued without intermission until August 16. This left the non-union producing fields, the majority of which are located in West Virginia, as the sole source of coal supply for this nation. These fields produced approximately 85,000,000 tons between April 1 and September 1, and this volume, together with 80,000,000 tons which were in the bins of consumers or on wheels at the inception of the strike, gave the country practically enough coal for current consumption during the strike period although stocks were rapidly depleted.

The total number of coal mines in operation in 1910 was 5,818; in 1920 it was 14,766, an increase of 154 per cent. Total production in 1910 was 416,000,000 tons; in 1920 it was 569,000,000 tons, an increase of 37 per cent. The average production per mine in 1910 was 71,550 tons; in 1920 it was 38,512 tons. These figures indicate a continual decline in the production per mine. Had the 1910 tonnage per mine been maintained in 1920, the tonnage of that year could have been produced by 7,950 mines instead of 14,766. The increase of 150,000,000 tons during 1920 compared with 1910 was gathered from 6,800 additional mines. While there was an increase of 154 per cent in the number of mines from which the production was gathered in 1920, compared with 1910, and an increase in the tonnage of coal produced of but 37 per cent, to meet this increased demand the railroads provided additional coal cars so that the aggregate tonnage capacity of cars was increased from 33,000,000

to 47,000,000 tons during this period, or 42.5 per cent. There was an increase of 14.5 per cent in the number of locomotives in service, and an increase of 53 per cent in their aggregate tractive power.

With the constant scattering in the units of coal production, with less concentration in the industry, the railroads were forced to spread out their transportation facilities so that each new unit, as it sprang up, might be given a fair share, as is required by law. If all the mines in the United States were operated twelve months in the year to capacity, they would produce 950,000,000 tons of coal, or nearly 100 per cent more than our domestic demands, plus export.

When you are told that there exists a coal car shortage it necessarily must mean that the increased units of mine production are not all receiving all of the cars and transportation required when demanded, but, on the other hand, it may not mean and in most cases has never meant, that the public has actually been short of coal. Is it not rather public demand and consumption which should be taken as a basis for coal car shortage, rather than whether the railroads are able to supply 100 per cent over-capacity in production with 100 per cent car supply at any season of the year it may be demanded?

Another factor of this situation which I am convinced we should not discount, is represented by the evolution in channels of coal distribution. A car loaded with coal at the mine must be taken to the destination to which it is billed and this is the greatest factor in the turn-around of this equipment.

Furthermore, the centers of consumption which formerly utilized large tonnages of coal have substituted other means of power and where certain producing territories had fixed markets in the past, their production now finds its way into higher competitive fields, and this has a material bearing upon price trends and the ability of the railroads to give the service demanded. The increase from 5,862,000,000 kilowatt hours in 1907 to 40,926,000,000 kilowatt hours in 1921 of electricity produced, or 603.3 per cent, represents a vivid portrayal of the substitution of power other than coal by the consumers of this country. With the development of water power and the increased efficiency in the use of coal itself, it is doubtful even giving due consideration to the expansion of industry, if the average production of coal will exceed 600,000,000 tons for the average of the next twenty years. Moreover, I want to call your attention to the fact that from January 1 to December 9, 1922, the railroads of this country loaded 6,819,128 carloads of coal, contrasted with 7,599,838 in 1921, or, in spite of the cessation of mining in union fields for five months of the year, the railroads have functioned to where the total car loadings are within a small fraction of those obtained during uninterrupted production in 1921. Certainly the figures which I have given you indicate that the railroads, so far as coal is concerned, kept apace in their supply of transportation with the measure of development in the industry which may have been predicated upon public demand.

With reference to the second subject—namely, the central control, financing and pooling of freight cars.

It should be understood that I speak of this matter in a

*An address delivered at the annual dinner of Milwaukee Traffic Club, Milwaukee, Wis., January 22, 1923.

purely unofficial way, divorced entirely from the position I now hold with the railroads, but based upon my study of this theory as a shipper and in my work for the Joint Congressional Commission during the last two years.

I want to take this opportunity to correct the impression which has been given to members of Congress and to the public generally, that the Transportation Report of the Joint Congressional Commission contained any recommendation for the pooling or central financing of freight cars. Recommendation No. 8 of that report dealing with this subject reads as follows:

"Prompt consideration and adoption of a comprehensive plan for the central control and distribution of freight cars."

This is exactly what the Car Service Division of the American Railway Association is doing today.

Machinery has been set up which fully takes advantage of the benefits to be derived from centralized control, without interfering with necessary localized effort or restricting the free application of the competitive practices of the railroads so necessary to perpetuate efficient operation and service.

I have personally a very great interest in that report and its recommendations, for the reason that I was charged with the responsibility of its compilation, and I can tell you quite frankly that this recommendation was never intended to support any plan calling for the pooling of freight cars or a central financial agency "Central Control" as indicated in this recommendation, and the pooling of cars in the sense that has been recently advanced, are two entirely different propositions. It was never intended, nor is it implied, that such a recommendation should be used for the purpose of passing all of the freight cars of the country over to an agency which would not be responsible for the financial or operating results of any single railroad system. To take one of the principal instruments by which the individual railroad maintains its livelihood under private and competitive operation away from that railroad and place it in the hands of an agency created by federal charter and financed through government funds, represents the initial step toward government ownership. If the shippers want government ownership of these railroads, it is my firm conviction that the adoption of such a plan as is proposed is the quickest way to get it. If you want private operation and the maintenance of competition, you want to stay just as far away from it as possible.

Those who advocate car pooling prey upon the car shortage conditions of the past fall and offer it as a remedy. It is contended that if such a plan is put in effect, cars can be moved around the country any time and in any way to suit the demands of the shipper. The plan is presented as a panacea for all of our transportation troubles. Let us examine it. At the outset, what is a car shortage? Is not the term misleading in that when we speak of being short of cars, we really mean that we are short of transportation? "Transportation shortage," rather than car shortage, is the term which correctly implies a lack of transportation to meet the demands of the shippers. "Transportation shortage" represents not a shortage of cars alone, but rather a shortage of all kinds of railroad facilities—second main tracks, passing tracks, locomotives, etc. There is nothing in the plan for car pooling which insures the building of more tracks or more locomotives, and in turn, quicker movement.

It is contended that a car pool will result in a reduction in empty mileage and will have a tendency to eliminate cross-haul empty movement simply to get cars home. The only past experience we have had in such an undertaking was during federal control, when the empty car mileage to the total was 2 per cent greater than during the five years prior to federal control. Empty movement is primarily caused by the necessity of returning cars to origin territory. As you know, the preponderance of traffic is east-bound and north-

bound, and for every five cars hauled into New England loaded, two must be returned to the origin territory empty under any system of car handling.

Indicative of the fact that empty movement is practically confined to the requirements of traffic, attention is directed to a recent investigation made by the Car Service Division during a period of car surplus when incentive would produce cross-haul empty movement, if it existed. This investigation covered several trunk line railroads at representative terminals and a movement of 20,317 eastbound cars, of which only 290 cars, or 1.4 per cent, were empty, and this included bad order cars and special types. The claim that a car pool would eliminate cross-haul empty mileage is not borne out by the facts of actual tests and experience.

It is claimed that a saving of 25 per cent would be made in switching. Practically 70 per cent of the car movement is loaded cars, and necessarily, 70 per cent of the switching at terminals is loaded cars. Obviously, they must be switched to the plant designated, and via the route specified. Therefore, if any saving is to be made, it would be only in the switching of the empty cars, and this leaves only 30 per cent of the total. Empty cars, regardless of whether they are pooled or not, must be switched, to be sent to the industries for loading, or to the railroads for loading points.

Obviously 25 per cent, or any figure anywhere near 25 per cent, could not possibly be saved in the switching expense, when it could not be applied except to the empty car movement. Figures show that during federal control the percentage of switch engine mileage to the total was greater during than subsequently, and that where savings were made, if any, it was due almost entirely to the fact that the Railroad Administration arbitrarily rerouted traffic through large terminals, taking away from the shipper the most useful instrument which he possessed in his relationship to transportation. You have a concrete illustration of this in the routing of traffic across the lake, keeping it out of the Chicago terminal during federal control. Even with this privilege switch engine mileage increased.

Another very prominent claim of the advocate of the plan is the fact that empty mileage would be saved for the reason that when a car was made empty it would be sent back home via the most direct route, instead of via the circuitous route from which it came, and as it was routed by the shipper. A practical demonstration of the theory would mean that loaded cars originating in Minneapolis and consigned to Chicago via the Burlington, Rock Island and Great Western would be made empty, a pink tag placed on them, and they would be sent back to Minneapolis via the Milwaukee or Northwestern which are the short lines. How about the balancing of motive power and train crews on the lines that haul the car into Chicago? Is their westbound movement to be dependent upon the solicitation of loaded traffic, and how much is the operating expense of these returning lines to be increased during periods of heavy eastbound movement? What happens to the Milwaukee and the Northwestern, and to their operating expenses and revenues, if they are to be made the empty car line from Chicago to the Twin Cities? We can visualize the effect of such a plan upon the ability of the short line or empty car line to serve its patrons.

Building and Repairing of Cars

Another of its theoretical high spots is its purpose to not only control the movement of cars and to say who shall have cars and who will not, also its attempt to build and repair cars. Under the program which was set down before the Interstate Commerce Commission last year by the advocates of such a plan, not only were the claims made which I have already cited, but there is to be an additional saving through the retirement of so-called "weak cars." To be specific, a definite program is proposed to retire 890,000 cars with a capacity ranging from 30 to 35 tons within the next five

years, and replace them with 540,000 steel cars of 50-ton capacity. An analysis of the details of this proposal indicates that the total retirements at the end of five years would be 890,000 cars, the total replacements 540,000 cars, total number of new cars built 250,000 cars, or an actual net decrease in the number of cars available for the use of the public at the end of five years of 100,000 cars. Not only does the plan contemplate a reduction in the actual number of cars available to the shipping public, but that capital expenditures that are made must be made for 50-ton cars. Are the trade units in this country, storage capacities, and the consuming capabilities of the country ready to utilize 50-ton cars and nothing else?

From January, 1912, to November, 1922, a period of 87 months of car surplus and 43 months of car shortage, an average of only 64 per cent of the capacities of freight cars were utilized. An increase in the capacity of the car increases the empty ton miles which must be hauled when the car is partially loaded or when it is returned to origin territory empty. While the railroads are generally adopting a standard of 40- and 50-ton box cars, I do not believe that any experienced railroad man or shipper is ready to say that all cars should be on a 50-ton basis. The average today is 42.2 tons, and this includes the high capacity coal cars.

Again, this proposed plan does not contemplate the elimination of any of the existing railway machinery for the repair of equipment or its operation but simply adds what may be termed "overhead" shops and a large expensive organization for rebuilding and allocating cars. Speaking first with reference to the proposal for the repair of equipment, we have today approximately two and one-half million freight cars and an analysis of the details of this proposed car pooling plan shows that it is contemplated to take jurisdiction over repairs of less than five per cent of the number of cars in operation and to control less than 32 per cent of the actual amount spent for repair purposes.

It is only contemplated that this so-called "agency" would extend its jurisdiction over heavy repairs and the rebuilding of cars. Only approximately one thousand cars per day are contained in such a classification. These cars are scattered from one end of the country to the other and are now repaired in the nearest railroad shop.

I doubt if there is a single instance where a car in need of rebuilding or heavy repair must not be fixed up to the extent that it can be safely transported and in the large majority of instances the car today actually undergoes its heavy repair or its rebuilding at the very point which otherwise would be used to place it in shape for transportation to one of these proposed "overhead" shops.

Under the proposal, how much empty mileage would be incurred instead of saved to move the car to the central shop when today it is being repaired at the nearest available railroad shop? How many such "overhead" shops would be necessary of establishment in the United States to repair or rebuild one thousand cars per day?

If the work were to be done as cheaply as it is being accomplished at the present time, then the shops must be large ones and placed upon a production basis, which means that very few would be required, with the result that under the proposal the average car in bad order for heavy repairs or fit for rebuilding must be hauled empty long distances before it reaches the repair point. Wherein does the proposal save empty mileage?

With reference to the control over the allocation of cars, not one thing is advanced by the advocates of a car pool which is not being carried out by the Car Service Division of the American Railway Association.

Distribution of Cars Under Present System

Railroads in the country have subscribed to carry out their orders for the relocation of cars to meet the demands of ship-

pers and during this last fall—the most strenuous period of car shortage which ever existed in this country—the Interstate Commerce Commission has not found it necessary to use its prerogative in a single instance. When the Car Service Division issues an order to an individual railroad for the movement of equipment, that order has been and is now being carried out. A concrete example is illustrated by the performance under Orders 33 and 33-A, issued by the Car Service Division, for the movement of western lines' cars through western junction points to relieve the car shortage situation in the agricultural districts of the country.

Under Order 33, from November 1 until January 17, 143,071 cars were sent through Chicago, St. Louis and other junction points into the western territory by the eastern lines. Of these, 72,865 were empty and 70,206 were loaded. Furthermore, the Car Service Division has the power and has exercised it to designate the movement of empty equipment to certain lines and via certain lines. This is aptly indicated by the procedure now in force where empties moving through Chicago are being made up in train loads and sent to this line or that one, dependent upon the demands of the traffic in the various territories. From October 15 to January 15, 39,421 empty box cars of western line ownership have been allocated by the Chicago office of the Car Service Division to various western lines in trainload movement.

The power under which the Car Service Division acts in cases of this kind is contained in Rule 19 of the Car Service Rules, which amply provides for the emergency requirements of any district of the country. What more is needed?

It has been stated to the public that two western railroads appealed to the Interstate Commerce Commission for assistance because the Car Service Division had failed. This is not a fact. One western railroad did file a petition with the Interstate Commerce Commission, but the petition was quickly withdrawn and no formal action was requested. The other railroad referred to never filed a formal petition with the Interstate Commerce Commission but did appeal to the Car Service Division, which gave relief to the extent that after this road's percentage of cars on line to ownership had been increased less than ten per cent it requested the diversion of cars en route to it to other lines for the reason that it had taken care of its business and had a surplus of cars when contrasted with demand.

Does this performance indicate, as the advocate of a car pool and central financing agency would have you believe, that there exists no interrelated interest between the railroads of this country? Does it indicate that when emergency conditions arise the carriers fail to act in unison, to relieve conditions no matter in what territory or part of a railroad they may exist? There is not a single point concerning distribution of cars in this country which is brought up by the advocate of a car pool which is not already being accomplished to the fullest extent by the railroads' own agency, which has been in existence ever since our entrance into the world war.

In addition thereto, the Car Service provisions of the Interstate Commerce Act give the federal government ample jurisdiction over this question if it is ever found necessary to utilize it. What more is necessary? What is to be gained in the distribution of freight cars through this so-called "agency"? What is really behind the promulgation of such a proposal? Again, there is nothing proposed by the advocates of a plan with reference to standardization which is not being undertaken by the American Railway Association.

To hear these advocates speak on this subject would lead one to believe that no consideration has been or is now being given to present and past accomplishments of the railroads through their own agency.

There is a division of the American Railway Association which is constantly working on the standardization problem and has been doing nothing else for many years. Cars and

parts thereof are being standardized as fast as traffic units and the requirements of commerce permit. Prior to 1900 there were 58 kinds of journal boxes in use. Today there are five sizes, with one interchangeable type. There were 56 kinds of axles; now there are five sizes, with one interchangeable type. There were 26 kinds of couplers; now there is one. There were 20 kinds of brake shoes; now there is but one. There were 27 kinds of brake heads; now reduced to one interchangeable standard. Brake beams at present are all interchangeable. Grab irons regulated by law, and so on.

The Mechanical Division of the American Railway Association is constantly keeping apace with the times on the standardization of equipment and its parts.

Reduces Competition

This proposal for a car pool and central financing takes away from private management a little more of its initiative and eliminates the only instrument of competition left to the individual railroad. The only competitive factor left with the American railroad or shipper is that represented by its ability to furnish adequate car supply and service. Instead of having two government tribunals regulating the railroads—namely, the Interstate Commerce Commission and the United States Railroad Labor Board—it is now suggested that we have a third, a self-styled private corporation, but in fact and practice a government institution.

I might go on and discuss other features of the plan which has been proposed where in every instance a careful analysis of the result of its practical application shows that the actual results thereunder are not only contrary to the claims being made but also produce an actual increase in operating expenses. I have stressed this subject quite strongly for the reason that I feel the public have received a misconception of what is actually proposed. Certainly the railroads of the country, or in fact the shippers, would not oppose the inauguration of any scheme or theory which will actually better services to the shipper and reduce operating expenses, but the subject is so big and shows so many ramifications that surely there must be an agreement on fundamental facts regarding its application rather than the adherence to the claims of its advocates when not a single one has been demonstrated as practical or in the interests of the shipping public.

I want to stress the absolute fallacy of expecting any agency created under federal charter, which means by legislative action, and with government money, purporting to represent a desire and intent to perpetuate private ownership of these railroads. Summarized, the scheme now proposed means the creation of a meddlesome, additional agency, backed by one hundred million dollars of government funds, which, as a matter of fact, as designated in its own program, gives you less cars five years from now than you have today. It does not stand responsible for the results of operation or the earnings of any railroad yet proposes to subject that railroad and its shippers to its mandates.

Public Interest in Railroad Transportation

Coming to the last subject, namely, "The public thought toward transportation in the future."

We possess 273,000 miles of steam railroads, 44,250 miles of electric lines, 6,014 miles of inland rivers, 370 miles of inland canals, the Panama Canal, and over 15,000,000 gross tons of trans-oceanic shipping vessels, together with 12,000,000 motor vehicles, of which over 2,000,000 are trucks, with a total value of nearly fifty billion dollars. This is the picture of the transportation machine which we possess. Without discounting the future possibilities of the development of the motor truck or the waterway, it is a certainty that the steam railroad will always serve as the bulwark of carrying the commerce of the country.

The prime requisite of the agricultural and industrial

producer is the adequacy and efficiency of the railroad facilities which serve him. Good prices for the products of the farm or industry do nothing for the producer if he is unable to place them on the markets of the world but must leave them in storage at the point of production or on the farm. We have just passed through a period of transportation shortage—a shortage due primarily to the fact that transportation has not in the past been allowed, because of restrictive legislation, to expand its machine to keep fully apace with the growth in agriculture and industry. When we come to an *impasse* where during the year 1921 more railway mileage was abandoned than was built, it is time to stop and analyze the trend of public mind and legislative action which allows such a condition to exist. If we go back into the past, we can probably find the answer to the lack of proper expansion of the railroads in that while they are always expected to participate in periods of business deflation, they have never been allowed to share in periods of business prosperity.

Predicating the trend of railroad revenues and farm prices on the adjusted years of 1909 to 1914, we find that the curve of the two was quite constant until 1916. Thereafter farm prices rose rapidly, reaching their peak in June, 1920, at 246, while freight rates were increased to but 130. The total freight revenues in 1900 were 9.2 per cent of the value of manufactures; in 1910, 9.3; and in 1920, but 6.9.

Rates Reduced as Business Improves

Only recently we have a concrete example of a reduction in rates during an upward turn in the business cycle. Commodity prices commenced to increase on May 1, 1922, and freight rates were reduced on July 1, just at the time when business conditions could best stand the then existing basis. Since that time commodity prices have continued to increase, yet the railroads have had their revenues reduced. For the first ten months of 1922 the total value of farm crops increased 32 per cent over the corresponding period of 1921, and the total freight revenue of Class I roads decreased 2 per cent, compared with 1921. In spite of that condition a total of 41,279,000 cars were loaded and transported from January 1 to December 9, 1922, compared with 37,401,000 for the same period of 1921. With the available machine, operating efficiency is increasing, railroads are hauling more ton miles with less freight train miles than ever before. Notwithstanding the fact that the total railroad revenues for 1922 show only a very slight increase over 1921, orders for 180,154 freight cars and for 2,600 locomotives were placed during the last calendar year. The orders for cars exceed any period since 1912 and the orders for locomotives are greater than any period since 1917—all of which is indicative of the fact that the railroads under private operation are doing their utmost to anticipate shippers' demands. Until the expansion of the railroad machine as applied to cars, tracks and locomotives has reached the stage of development commensurate with the progress of agriculture and industry non-revenue producing capital investments will be limited and rightfully so. As to the movement and location of equipment, the Car Service Division is now establishing district managers throughout the United States that they may be kept closely in touch and intimately advised of the requirements of the public in each territory. Shippers themselves in the form of regional advisory committees will be asked to aid the district managers towards the end that transportation requirements of the shippers may be constantly anticipated.

In conclusion, permit me to say that less restrictive railroad legislation and freer application of economic law to the railroad business, and a recognition on the part of the public that the railroads are business institutions and are run on business principles just as any other industry, is a mandatory requisite for the better industrial and economic existence in the future.

Railroad Committee Opposes Car Pooling Plan

Suggested Ways of Improving Coal Transportation Discussed in Report to U. S. Coal Commission

WASHINGTON, D. C.

IN THE *Railway Age* of January 13 there were published some extracts from a preliminary report of a special conference committee representing the American Railway Association to the United States Coal Commission regarding the relations between the railroads and the coal industry. The report also includes an analysis of certain suggested remedies which have been proposed in various quarters as intended to be helpful toward improving transportation as applied to the coal industry. Among these were the plan for the pooling of freight cars, which has been advocated by the National Association of Owners of Railroad Securities. The report also discusses the subjects of assigned cars, storage and seasonal coal rates, in part as follows:

Pooling of Freight Cars

The pooling or common use of the freight car equipment of the country, while not a new subject, is one that is just now receiving considerable attention and is proving popular in some quarters, especially when accompanied by the thought that it will bring about a facilitated interchange of cars between the various carriers.

This question of pooling freight car equipment is now actively under consideration by a special committee of the American Railway Association, and it is expected that their views will shortly be available, but we feel that it is important that the following objections which have been presented against the adoption of the plan be called to your attention at this time:

1. The plan of pooling cars has not received the endorsement or approval of those best qualified to pass upon so important and far-reaching a subject. The savings and benefits claimed are theoretical and have not been supported by any conclusive evidence or facts, and it is doubtful whether any saving could be realized.

2. Present methods of handling equipment are the result of most thorough study carried on for years by railroad officials through the American Railway Association to promote efficient and economic handling of cars. Previous experiments under pool operation have not proven efficient or economical.

3. The principal plan now seeking recognition would place under a central agency the absolute control of all equipment, shops and repair facilities, and the individual railroad would thereby lose control over a very considerable part of its property without being relieved, in any way, of the responsibility under the law to maintain and furnish transportation upon reasonable request.

4. The central agency does not assume any financial responsibility for the results of pool operation, although it could, without authority or sanction of the individual railroad, create a vast expense which would be borne by the carriers and which would prove burdensome and unnecessary in the relocation of empty equipment without any regard to the loaded haul. Nor does it assume responsibility for any disastrous effect that might follow a mistaken or improper policy in car distribution. It could without any compensation for property appropriated deplete the car supply on one road in order that the shippers located on an improvident road might be better served.

5. It disregards the right of shippers who have developed their business upon the lines of roads having equipment especially adapted to the requirements of their traffic. The grain road has provided cars that will carry grain and flour. The coal road has provided special type of cars, that require return to the owning line, or the best interests of its patrons are not served, and the special types of cars provided by such roads are not suitable for service on other roads because of the difference in character of loading and unloading facilities, operating and other conditions. Some roads have built coal cars of great capacity which are not suitable to, and could not be safely operated on, many of the other lines, both on account of weight limitations and their use in combination with cars of lighter capacity and construction.

6. Economic conditions have forced the railways to increase the tonnage of trains and strength of locomotives which the use of small capacity cars would limit, resulting in the loss of the economic benefits.

7. The central agency could not, under any circumstances, no matter how competent, have sufficient knowledge of local re-

quirements, to properly distribute cars without serious detrimental results to both carriers and shippers.

8. It is a fact that each coal producing district generally serves its adjacent or a specific territory, and the coal producing railroads provide the equipment, therefore the return of the empty cars to the owners is a regular and orderly procedure through the gateways and junctions via which the loaded coal cars move, equalizing the loaded and empty movement and utilizing for the movement of the currently returning empties the motive power employed in the outwardloaded movement, to the advantage of most economical operation and expeditious handling. This provides a local control which affords the most immediate relief in cases of operating difficulty.

9. The plan does not and cannot provide for any practicable or workable method for equitable distribution of per diem or car hire expense, especially during periods of car surpluses when large numbers of cars will be stored. It could increase the car hire account of any railroad without regard to its traffic or financial conditions.

10. It contemplates complete standardization of all equipment and appliances, which is of doubtful expediency, as it would destroy inventive competition and remove incentive for improvement and advancement.

11. The plan removes from the control of the individual railway, by curtailment of its power to utilize its own equipment to best advantage, the possibility of realizing on its major investment, namely, its roadbed, power, and facilities other than cars.

12. The individual road would lose control over the maintenance of its equipment. It is recognized that some cars must be better maintained than others in order to handle the traffic for which they were built and are used. On the other hand, the central agency could increase the cost of maintenance under an unwarranted and mistaken policy and the individual railroad would have no voice in the matter whatever.

13. The present arrangement for meeting emergencies, by action of the Car Service Division of the American Railway Association, should not be discarded for some untried, unsound, and impractical theory, especially since the experience with common use of cars under federal control brought about disastrous results in car maintenance, with an increased percentage of wasteful empty car mileage over that which previously obtained under car handling methods based on the ownership principle.

14. If the equipment ownership of the railroads of the country is insufficient to meet the industrial demands, it would be more advisable and desirable to establish a basis for equipment ownership by individual railroads consistent with its traffic demands. This would not disturb the present initiative of some roads to provide equipment from a competitive standpoint, and would also create a uniform basis for measuring the ownership requirements for all roads.

Assigned Cars

It has been suggested in some quarters that the difficulties in the coal industry have been intensified by the long established practice of carriers of assigning coal cars during car shortage periods. During car plenty periods no objection is offered to the assigned car practice. An assigned car, as that term is commonly understood and employed, is either a coal car owned and used by a coal company or consumer of coal, or a railroad owned car used by the owning railroad to transport fuel coal for its own use. Railroad fuel cars are of two classes; cars of a railroad serving the mine to which the car is assigned, commonly known as company fuel cars, and cars of a railroad not serving such mine, commonly known as foreign railway fuel cars.

Prior to 1907, in the distribution of coal cars many carriers did not take into account private cars or railroad owned cars used for a carrier's own fuel purposes. Under the then existing practice a mine owning private cars was given all such cars and a mine having a railroad fuel contract was given railroad owned cars sufficient for such loading. In addition thereto such mines were given pro rata proportions of railroad owned cars based on their ratings for commercial coal loading. About 1907 this practice was brought to the attention of the Interstate Commerce Commission and the commission in a series of decisions adopted what is now commonly known as the Hocking Valley-Traer rule of car distribution during car shortage periods.

By these decisions coal cars for distribution purposes were divided into four classes: (a) private cars, (b) foreign railway

fuel cars, (c) company fuel cars, and (d) system cars. The first three classes of cars were designated as assigned cars, and were required to be furnished to commercial mines to which they were assigned or consigned without regard to the pro rata distributive shares of such mines based on their orders. If the cars assigned to such mine equaled or exceeded its distributive share such mine could receive no system cars. If, on the other hand, the available assigned cars did not equal the mine's distributive share such mine should receive enough system cars to make up the deficit.

To carry out this practice it was necessary for the carrier serving commercial mines to take all cars, including assigned cars, into account and in the Hocking Valley-Traer rule the commission required the counting against the mine of each and every car furnished such mine shipping commercial coal. The commission in those cases recognized the right of a carrier to take the entire output of a mine for company fuel, thereby putting that mine entirely out of commercial business without taking into account or counting the cars supplied such mine. The Hocking Valley-Traer rule of car distribution was contested by the carriers and sustained by the Supreme Court of the United States.

Ruling for Counting Cars

The rule that all assigned cars must be counted has been universally in effect continuously since the Supreme Court decisions, supra, and with the exception of a short period during federal control, when under an arrangement between the director general of railroads and the U. S. Fuel Administration the railroads' fuel requirements were taken care of, the classification of cars fixed by the Interstate Commerce Commission in the Hocking Valley-Traer cases has been unchanged. During the federal control period railway fuel cars were reclassified as system cars and thus thrown into the general pro rate, but even then the Fuel Administration in effect assigned railway fuel cars.

When the transportation Act was under consideration by the committees of Congress, an effort was made by certain interests to secure legislation which would prevent the assigning of private cars and railway owned cars for railroad fuel and to that end the original Senate bill contains language which would have made it unlawful to use assigned cars in the way provided by the Hocking Valley-Traer rule. Congress, however, refused to adopt this language and in its stead enacted Paragraph 12 of Section 1 of the law which in effect put into statutory form the principles of the Hocking Valley-Traer decision.

The discussion of this rule has been so general and views as to its desirability and legality have been so diverse that the Interstate Commerce Commission instituted an inquiry into the subject of assigned cars bearing the docket number of 12530. Extended hearings have been held by the commission in the summer and autumn of 1922, a great mass of testimony has been offered covering every phase of the matter and it is confidently expected that the commission will within a comparatively short time render a decision as to whether the Hocking Valley-Traer rule can, in the light of the legal interpretation of Section 12, Paragraph 1, of the Interstate Commerce Law, or should in the interest of reasonableness be continued, extended, modified, or abolished.

Perhaps no stronger statement of the necessity for the use of assigned cars can be found than that contained in the Interstate Commerce Commission's answer to the so-called Harding Resolution passed by the United States Senate in 1920. We call attention also to the statement as to the necessity for the rule found in the opinion of the commission in *Hillsdale Coal & Coke Co. vs. Pennsylvania Railroad Co.*, and in many other cases.

In considering the practical question involved in this rule it should be remembered that no railroad can operate efficiently and economically without being assured of a regular and dependable supply of fuel of a kind and character suitable to its locomotives and at places convenient from an operating standpoint to the points on its line of railway where the coal is needed. If the railroads do not secure a satisfactory supply of coal, coal for other lines of industry cannot be transported and consequently the most ample supply of cars would be useless. Bearing this obvious fact in mind, it has been the past experience of the railroads that where assigned cars were not used the inevitable alternative is confiscation of commercial coal, resulting in great confusion and disturbance to all lines of industry. The practice of railroads in confiscating coal in times of emergency necessitates public utility companies and private consumers of coal being deprived of their supply, resulting in damage of the gravest character, which damage consignees naturally seek to recover from the railroads in the form of special damages. Indeed, some courts have enjoined carriers from confiscating coal upon the theory that the railways are always in a position to obtain fuel coal by the assignment or free use of its cars. No more unsatisfactory or demoralizing method can be suggested for obtaining necessary fuel coal than the practice of confiscation.

The experience of the railroads has been that unless they are permitted to assign cars they are in a scramble for coal, are often forced to take coal which is unsuited to the requirements of the locomotives at places where the use is inconvenient and overly expensive to assemble and in quantities which are not dependable. In addition to these practical considerations, there would seem to be strong legal reasons why the practice of assigning cars should be continued.

In the case of private cars, there would seem to be no sound economic reason for requiring them to stand idle merely because by their use the owner gets a larger supply than another who owns no private cars. As a matter of fact, the use of private cars by certain operators leaves a more abundant supply of system cars for the use of others. This right of a private car owner to the use of his own vehicles of transportation was recognized by the director general, who made an exception of private cars when assigned cars for railway fuel were discontinued. So in the Interstate Commerce Act it will be found (in paragraph 15, section 1) that the power of the Commission in making car service rules and regulations extends only to cars, locomotives and other vehicles "as between carriers," thereby leaving private cars outside of the field of service regulation.

Passing from the question of private cars, there would seem to be no reason why a railroad which does not originate coal should not be allowed to send its own cars, purchased and retained for that purpose, off its line to mines on other roads with which the foreign road has a fuel contract to obtain a necessary supply of fuel. By so doing the car supply of the originating road is increased and the system cars of that road are available for general use and distribution. A car of this character is in principle of the same class as a private car.

When we come to consider the practice under which a railroad originating coal assigns its own cars for company fuel, we are confronted at the outset by the familiar legal principle that a railroad transporting its own material in its own vehicles does not act as a common carrier, but as a private carrier. If we consider the situation arising when a railroad has supplied itself with a legally sufficient supply of coal cars which it uses in the commercial business no one can doubt that the railroad would have a right to purchase additional cars to be used exclusively in the transportation of company fuel. If it be conceded that a railroad may so use its cars when it takes the output of a mine, it must follow that by the same token it can furnish cars where it does not take the entire output, provided it observes the limitation in the Hocking Valley-Traer rule, namely, that it will not furnish any commercial cars where the number of cars assigned equals or exceeds the mine's pro rata share, for under this rule every mine that on any day gets more than its pro rata share is in effect an output mine for that day.

It should be borne in mind that railroads must have fuel and that if the practice of assigning cars is abolished the total car supply would not thereby be increased. The only effect would be to prevent railroads from making contracts for coal upon which they can absolutely depend and to drive them into the open market for spot coal, and to the objectionable practice of confiscation.

Evils Exaggerated

We assert with confidence that the so-called evils of assigned cars have been greatly exaggerated, largely due to the grossly inflated ratings of commercial mines. While we are not in a position at this time to give accurate figures on the subject, yet we believe that, with mine ratings deflated to represent actual capacity, if all assigned cars were abolished and all cars distributed equally throughout the trade, there would be no appreciable effect on the general car supply enjoyed by commercial mines. Furthermore, if the assignment of private cars was continued and the assignment of railway fuel cars only abolished, the general car supply would not be increased, and the commercial car supply only slightly increased, if at all.

Moreover, we would have a condition in which no railroad would be certain of a dependable supply of fuel of the exact character required at the place where it was needed. The railroads would be placed completely at the mercy of the coal operators in time of coal car shortage and the only method of securing coal would be by spot purchases and confiscation with all its attendant evils.

It is obvious that no injury to the public and no diminution of the coal supply can result from a railway being permitted freely to use or assign its own coal cars for the purpose of obtaining its own coal mined in its own mines, when such mines confine their operations exclusively to the production of such railway fuel.

It has been suggested that carriers obtain their fuel coal by dividing their requirements among all mines producing suitable railroad fuel coal. As this plan necessitates anticipating car shortage periods and over-contracting sufficiently to meet carriers' requirements during such periods, it has few advocates.

It is obvious that any arrangement by which a carrier undertakes to divide up its fuel coal requirements among many mines is

undesirable from the standpoint of the public and the carrier, since such a plan involves so many operating difficulties as to make it uneconomical and wasteful of transportation service.

Paragraph 12 of Section 1 of the Interstate Commerce Act, as amended by the Transportation Act, requiring the rating of mines and the counting of cars, expressly applies to mines calling on carriers for transportation, i.e., mines shipping commercial coal, and does not apply to fuel mines owned by carriers or entire output fuel mines not shipping commercial coal. Assigned cars have therefore no legal bearing on cars so used by carriers at such mines.

In view of the fact that under the law this is a matter committed to the discretion of the Interstate Commerce Commission within the legal limitation of section 1, paragraph 12, of the Interstate Commerce Act, and the further fact that that Commission is now engaged in an exhaustive investigation of the problems presented by this question, we respectfully suggest that the United States Coal Commission make no recommendation adverse to the use of assigned cars.

Increased Storage of Coal

During the past few years, due to recurrent labor troubles in the bituminous coal mining industry, the railroads have gradually enlarged their storage program, particularly those lines which are dependent on foreign lines for their fuel supply, and more particularly those lines in the northern latitudes, such as the New England and Northwestern roads. Such roads customarily store from six weeks' to three months' or more coal supply during the spring and summer months as a protection against irregular movement from mines during the winter months. On the other hand, roads whose source of supply is from mines located on their own lines store coal only at coaling points remote from the mines. For them to store coal more generally would be uneconomical and would not have the effect intended, since coal stored for locomotives must be reloaded in cars for movement to and unloading at coaling stations. Experience indicates that the cost to railroads of storing and rehandling coal varies up to 70 cents or more per ton, according to facilities. Industries store coal adjacent to power houses and convey such coal direct from storage piles to furnaces by means of machinery.

On April 1, 1922, there were approximately sixty-three million tons of coal in storage throughout the country, of which the railroads had, in cars, 7,142,820 tons, or 21.6 days' supply, and in storage piles 12,701,013 tons, or 38.4 days' supply, a total of sixty days' supply, while all other industry had only about fifty days' supply. Inasmuch as there was a large surplus of empty coal cars on the railroads April 1, 1922, they were justified in holding much of their storage coal on wheels, instead of in piles. Considering that a large portion of the locomotive fuel is consumed in the heart of the coal mining districts and that many locomotives are coaled direct from mine tipples, it would appear that the proportion of coal stored by railroads compared most favorably with that stored by other industries.

The suggestion that railroads store their fuel coal supply during the spring and summer months cannot always be accepted as possible of fulfillment, as for example, during 1920, when the coal cars were fully employed, beginning in January and continuing throughout the year. Had the railroads undertaken the customary storage of coal, the car supply would have been inadequate for the commercial coal traffic, and such a policy would have defeated its own purpose. During the summer and fall of 1922, on account of the coal strike, and the fact that coal cars were fully engaged upon general resumption of mining, the railroads were unable again to establish the usual stock piles. In fact, they were informally requested by the government to refrain from storing coal, so as to release coal for current commercial purposes. As a consequence, much capital in the form of expensive coal handling machinery and facilities was tied up while interest and maintenance charges continued. The suggestion of regular storage of coal by railroads would have to be accompanied by the ability accurately to forecast future conditions.

The storing of bituminous coal, particularly coal from various mines, in one pile involves the risk of spontaneous combustion, and while the following of certain principles will reduce the hazard of spontaneous combustion, yet its actual cause has not been satisfactorily explained or agreed upon. No positive remedy for the danger is known. Storage coal deteriorates, depending on length of time stored and the character of the coal itself. Again, the necessary rehandling of locomotive storage coal results in a large measure of slack coal, which is generally undesirable for locomotive fuel.

Seasonal Coal Rates

Those who advocate seasonal coal rates seem to think it would bring about a heavier movement during the summer months—the months of greatest transportation efficiency; and it is also claimed they would result in a more evenly balanced movement, thus spreading out the available car supply throughout the year, also

equalizing monthly production so as to give regular year round employment to mine labor.

In the large producing section of the East, of which the states of Ohio, Pennsylvania, West Virginia and Eastern Kentucky are representative, and where approximately sixty per cent of the total bituminous coal production of the country originates, there is a fairly balanced movement, the summer months, if anything, being the season of heaviest movement.

In the Middle West, of which the states of Illinois and Indiana are representative, the movement is ordinarily heavier in the winter than in the summer months.

Here we have two great producing fields competing for the coal trade of the Northwest.

Reducing the rates from the Middle West to stimulate the movement of coal from those fields to the Northwest during the summer months would either drive the eastern coal out of that market or compel the roads serving the eastern fields to reduce their rates during the season of heaviest movement, with no resultant stimulation of this traffic.

Also, the movement from eastern fields through tidewater is heaviest during the summer months because of evident advantages in handling by water. Certain it is that there is a vast movement which by physical conditions is now induced in the summer months, which could not be materially increased through any reduction in rates during that season of the year.

Unless there was an unusual demand for coal about the time the rates changed, the effect would be to slow up the movement for a material period prior to the reduction, and greatly stimulate it just before the advance.

Moreover, if there was a brisk demand for coal, the law of supply and demand would assert itself and the reduction in transportation charges would not be reflected in the selling price to the consumer. In other words, any reduction in rates that could be contemplated by the carriers might bear a very meager relation to the possible fluctuation in the price of coal.

A sliding scale such as has been advocated in the past would not in our judgment solve the question, because the railroads could not afford to reduce their rates enough to make the saving to the consumer sufficient to offset the outlay necessary to the purchase and storage of coal in advance of his immediate requirements.

Therefore, we do not believe any improvements of the situation would follow from the inauguration of so-called seasonal rates.

It is the understanding of the carriers that, in the Reply of the Bituminous Operators' Special Committee to the letter of the Coal Commission, it has been intimated that an immediate contributing cause of difficulty is found in "inadequate transportation facilities." To what extent the conditions which create this impression are attributable to the abnormal over-expansion of the coal industry by the uneconomic multiplication of mine operations, it is not our province to determine. It is enough to point out that there is an immediate demand on the part of an important section of the shipping public for additional rail transportation facilities; and, furthermore, the growth of the country and the increase of its commerce would, in themselves, constitute sufficient reasons for developing the carriers' facilities to meet the demands which are sure to be made upon them. But this can only be done by the investment of additional capital, and additional capital can be secured only by the reasonable assurance of a fair return, and this assurance will not exist unless the investing public has reason to expect from the government a liberal, and not a repressive attitude.

We have endeavored to inform the Commission as to the causes of the trouble, so far as the railroads are factors in the situation. We have set out some facts as to the extent of car shortages in times of peak demand, and have stated our views as to certain suggested remedial measures. We feel that the real remedy is to be found in the adoption by the American people, speaking through legislative bodies and regulating commissions, of policies which will bring about:

1st. Such an attitude toward the railroads as will convince the public that money invested in railroads will receive a fair return, thereby strengthening railroad credit and making it possible to increase railroad facilities so as to care for the growing transportation needs of the country.

2nd. Peace in the coal industry and in the railroad industry, with such relations between employers and employees as will prevent strikes, the fruitful cause of interrupted production and restricted transportation.

J. E. Roberts, superintendent of transportation of the Delaware & Hudson, is chairman of the committee. He is also chairman of another special committee of the American Railway Association referred to in the report as having the question of pooling more actively under consideration. A tentative report of this committee was to be submitted to the directors of the A. R. A. at a meeting this week.

Van Sweringen Control Will Give C. & O. Much Needed Outlet

A BRIEF HEARING was held before Director Mahaffie of the Bureau of Finance of the Interstate Commerce Commission at Washington on January 22 on the application of seven directors of the New York, Chicago and St. Louis for permission to become directors of the Chesapeake & Ohio. W. A. Colston, chief counsel of the New York, Chicago & St. Louis, said that the commission had apparently called the hearing on the assumption that these seven directors constitute a majority of the directors of the Nickel Plate, because the commission's notice referred to the board as consisting of 13 members, but that this was an error as the board consists of 15 members and the seven, therefore, do not constitute a majority. Also, while the Chesapeake & Ohio board consists of nine members, he said, there is no obstacle to increasing the number so that the seven men will not constitute a majority.

The New York, Chicago & St. Louis intends to acquire a substantial interest in the stock of the Chesapeake & Ohio, Mr. Colston said, but does not intend to acquire as much as 50 per cent and its application, therefore, does not come within the provisions of the law relating to the acquisition of control of one road by another. While the Nickel Plate, in connection with other interests, intends to acquire a substantial part of the stock of the Chesapeake & Ohio, no application need be made to the commission until it proposes to acquire in its own name a control and in that case an application would be filed, but he asked that the application for authority to become directors be determined without any assumption as to the company's intentions as to control. The commission had asked that H. E. Huntington and all the directors of the Chesapeake & Ohio be present at the hearing.

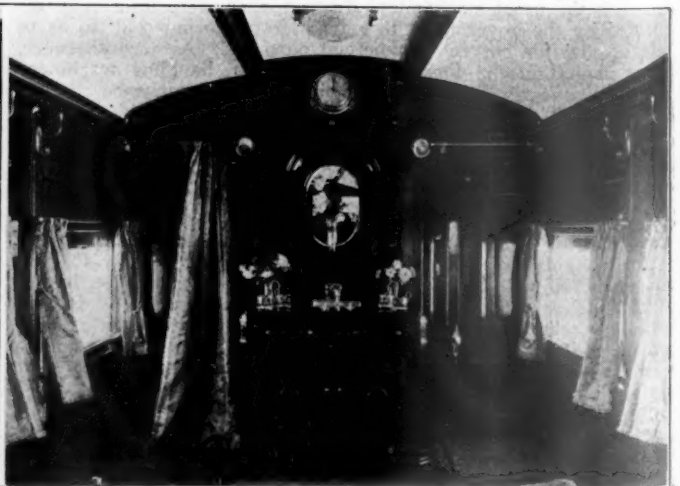
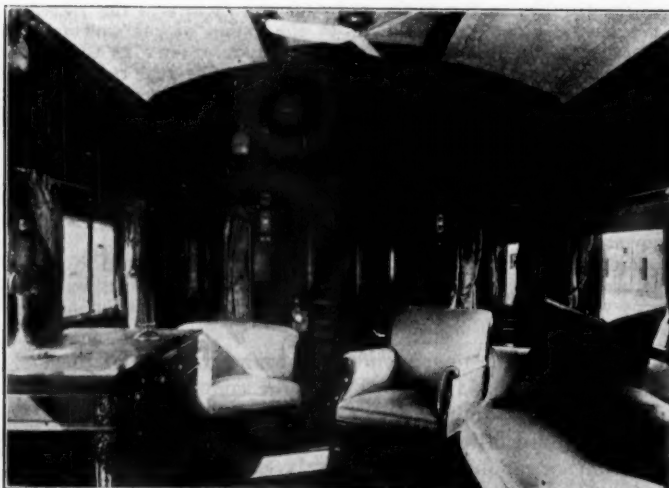
Mr. Colston said that Mr. Huntington was in California and because of his age and health it was regarded as dangerous to call him to Washington, but that the other directors were present. J. J. Bernet, president of the Nickel Plate, and W. J. Harahan, president of the Chesapeake & Ohio, testified briefly as to the reasons for desiring to bring about a co-operation between these two roads by interchange of east and west traffic.

Mr. Bernet said that he had given the problems of the Chesapeake & Ohio considerable study. It was his belief,

he said, that the latter's greatest difficulty is to get rid of the traffic that it originates. The worst congestion is at Cincinnati, he pointed out, and there is not much immediate prospect for relief through that gateway. There is a somewhat similar difficulty at Columbus. The C. & O. must accordingly look for relief through the lines north of Columbus. The Nickel Plate, he said, could give the desired relief, particularly through the connection between the Hocking Valley and the Nickel Plate at Toledo which would offer for C. & O. coal a route to and through Chicago and east to Cleveland. There would be offered similar avenues for other traffic. Mr. Bernet, on questioning by Director Mahaffie, said that at present there is only a limited amount of coal handled in interchange between the Nickel Plate and C. & O. and but a small amount of interchange traffic between the C. & O. and the Van Sweringen lines generally. The Nickel Plate, he said, has plans for increasing its equipment and facilities to provide for increased coal interchange traffic, but what it desires, however, is a continuity of C. & O. policy. No definite contract is intended to be made and there is to be no change in the present divisions. Mr. Bernet also pointed out that the present Van Sweringen lines—the Nickel Plate, Clover Leaf and Lake Erie & Western—have no competition with the C. & O.

W. J. Harahan, president of the Chesapeake & Ohio, amplified the idea presented by Mr. Bernet. He said that the C. & O. was restricted by the inability of its western connections when they are working at capacity to take care of all the traffic the C. & O. can give them. There has been much complaint by shippers on this score. The connecting carriers want the business, he said, but do not feel like carrying out the developments necessary to handle it properly. An alliance with interests strong enough financially to make such arrangements would, therefore, be particularly valuable. Mr. Harahan pointed out that the route from C. & O. coal territory to St. Louis, Chicago, etc., via the Van Sweringen lines would not in most cases be the short haul, but it was his opinion that operation in connection with the Nickel Plate would give shippers a more adequate and prompt service than they now have.

These views were agreed to by O. P. Van Sweringen, M. J. Van Sweringen and by A. C. Rearick, counsel of the C. & O. O. P. Van Sweringen, in addition, said that he had great confidence in the Chesapeake & Ohio. He pointed out that it would give financial assistance needed in the expansion of the Van Sweringen interests.



The Private Train Built for the Prince of Wales' Tour of India—Left, Sitting Room; Right, Dining Room

Railroads Should Pay Dividends When Earned

"A Stockholder's Plea for Courage" Suggests This As Remedy for Undue Proportion of Funded Debt

WRITING in the January 15 issue of Barron's under the title, "A Stockholder's Plea for Courage," William Peter Hamilton, editor of the Wall Street Journal, makes the far-reaching proposal that the railroads should pay dividends as they earn them and quit investing the stockholder's just return without his consent. There is too large a proportion, he points out, of bonded to stock capital. "Indeed," he adds, "if new partners do not put more money into the business, the railroads are doomed." Speaking as a stockholder, he says, "Give us the dividends which our capital earns and let the public find new capital if it insists, through the newspapers or Congress, on a continually improved service in the face of artificial and needless handicaps."

"If in the case of some railroads," he again says, "this seems to curtail service, that is exactly the lesson which the public needs to learn. If in the case of railroads not earning dividends the bond credit in the money market is inadequate, let the bondholders take the consequences and reorganize. That is another lesson still more urgently needed by Congress, tax-wasting state legislatures and the people the railroads serve. They can't eat our cake and have it."

A portion of Mr. Hamilton's article is reproduced here by permission of Barron's.

Look at the capitalization of our railroads—not in its amount but in its character. No less than 59 per cent of it is bonded debt, which can only be renewed but can never be extinguished. It may be admitted that some railroads show a better proportion than 41 per cent of partnership capital, but the Baltimore & Ohio, to take a single example of a well managed and relatively prosperous road, is bonded in the proportion of five to two. How the popular idea of excessive (or "watered") capitalization of railroads has become so ingrained it would be difficult to say. Our roads are capitalized at something like \$67,000 a mile, not much more than half of the lowest capitalization of its railways by any other country in the world.

The charge of over-capitalization cannot apply to more than a negligible percentage of American railroads. They are, indeed, dangerously under-capitalized in the proportion of share or partnership capital to their debt. Indeed, if new partners do not put more money into the business the railroads are doomed.

It is plain that under the Transportation Act of 1920 there is little inducement to venture such new capital because, after 6 per cent on the "property investment" (not on the stock) is earned, the surplus is to be taken by the Government, to form a sort of revolving fund for the charitable relief of poorly conceived, half-bankrupt and badly managed roads. But at any rate, by this "recapture" provision, still untested in the Supreme Court, half of this surplus under the Esch-Cummins Act is to be given back to the roads which earn it. The plain policy, therefore, and the new policy which I am here advocating, is one of large dividends out of earnings to make new stock issues attractive. Earnings, indeed, for the want of new stock capital are, so far as the prosperous roads are concerned, being put back into the property to what, I think can be easily shown to be a fatuous extent. This forced investment can only be returned to the stockholder by the doubtful expedient of stock dividends. This does not satisfy me as an investor. I have facilities for changing a hundred-dollar bill and do not need to have it paid to me in five twenties.

It is clear that the inadequate new capital the railroads are now creating by saving unjustly binds the present holder of stocks, who is given no option and no say in the matter.

Give us the dividends our capital has earned and quit investing our just return without our consent.

This reinvestment is something more than allowance for liberal maintenance and renewals. The British railways, which incidentally are capitalized at a figure five times more than our own per mile, have always followed the policy of paying the shareholders the dividends their capital earns, raising new capital by the issue of stock—not bonds—or in other words, taking more partners into the business. If the public wants more and better service let it pay for it out of its own pocket. If the Atchison, Topeka & Santa Fe is earning 16 per cent on its common stock—and I surmise that it is—but has embarked on a policy of improvement out of earnings which will take up that surplus, the sooner it completes or curtails the improvements the better. It should reverse its policy and make the difference between 6 per cent and 16 per cent an inducement to new stock capital. This locking up of the stockholders' earnings, only to make the property a tempting bait for tax-wasting politicians, a cow that is to be milked in taxes 20 times a day, has been carried altogether too far. It amounts to putting the stockholders' head into the lion's mouth.

Bondholders' Rights—and Duties

There is no need to ignore the desirability of paying unearned dividends out of surplus in certain contingencies. A legitimate pretext would be to maintain the dividend record for the purpose of keeping the bonds in the class permitted to saving banks under a large number of State statutes. That is desirable, but by no means so imperative as has been assumed. If the bondholder has unalienable rights that is not one of them. It is necessary that the bondholder himself should be made to see the risks of his own position as clearly as the stockholder must. There are few railroads in the United States which are now in a position to issue prior lien bonds in any quantity. That source of new capital may be considered, for all practical purposes, as exhausted. Present bondholders have been educated to taking safety too much for granted. Only when they find their interest in danger from politics will they begin to develop that activity and watchfulness which should protect even the best investment. On such a threat societies for the protection of the owners of railroad securities come into existence. It was just such an organization as this which was responsible for the confiscatory "surplus" clause in the Esch-Cummins Act and, perhaps, also for some of the President's utterances to Congress on the railroad question.

Coddling Bad Investments

It is easy to see that the proposed confiscation of half of a prosperous railroad's earnings above 6 per cent on its "property investment" (not even on its common stock) has a heavy fight in prospect before the Supreme Court will reverse itself on the rights of property. Politicians are establishing all sorts of uneconomic rules, to apply to railroad property alone—until the next group for looting is chosen. It is, indeed, by indirection that they have established one of the worst of these in repealing the old English common law maxim of "caveat emptor" as applying to railroad bondholders. It is necessary here to risk running counter to the views

of President Warfield and President Kingsley, but it is because I think that the people who invest the funds of life insurance companies should have exercised more judgment in the past or, to put it in another way, more independence of the issuing bankers.

Every English railroad pays dividends as it earns them. It changes the rate a quarter or a half of one per cent on the "ordinary" stock, every quarterly period if necessary. The English stockholder attends the general meetings with a frequency and intelligence our own might well emulate. He would heckle his board of management all night before he would consent to having his earnings turned into capital without his consent, as our railroad stockholders have had the earnings of their capital turned back into the property for so many years past.

Pay the Price of Adequate Service

It comes back to the question of a needlessly unified railroad management policy utterly lacking in courage.

Give us the dividends which our capital earns and let the public find new capital if it insists, through the newspapers or Congress, on a continually improved service in the face of artificial and needless handicaps.

There is little doubt that the present policy represents a feeble adoption of a line of least resistance, dating from the time when commission regulation became complete and meticulous. There is even less doubt that the centralization of the railroad unions, with subordination or obliteration of independent unions on each system, gave excuse for such hand-to-mouth policy. But there seems to be good hope that the shopmen's strike will prove a blessing in disguise. Let every railroad stand on its own feet. Let each, by separate demonstration, show the people they serve why it is impossible to establish working rules, financing rules, even operating rules, for all railroads alike. The problems of the Bangor & Aroostook in northern Maine are not the problems of the Central Pacific. Any tyro can see resemblances, but it takes scientific knowledge to recognize differences. All the sheep in a flock look alike to you or me, but every one of them has a character of its own to the shepherd. All railroads look alike, and all look like sheep to be fleeced, to our politicians. But if the railroad managements are wise, and if the stockholders will only hold them up to their duty, they will run each railroad as a separate going concern, giving the stockholder the power to exercise a preference about putting his dividends back into the property.

If in the case of some railroads this seems to curtail service, that is exactly the lesson which the public needs to learn. If in the case of railroads not earning dividends the bond credit in the money market is inadequate let the bondholders take the consequences and reorganize. That is another lesson still more urgently needed by Congress, tax-wasting State legislatures and the people the railroads serve. They can't eat our cake and have it.

Everybody's Interest in Railroad Prosperity

Most of us use the railroads in some way, either as passengers or as shippers. All of us use the railroads as consumers of what the railroads carry, and therefore all of us pay freight rates indirectly. Stock ownership and bond ownership are not the same thing; but if the people financially interested in the securities of the railroads were organized into a political party they could very nearly dictate the character and make-up of Congress. Their organization would include all the depositors in the saving banks, outside of the service the post office conducts. It would include every beneficiary of a life insurance policy and everyone who pays a life insurance premium. It would include all those whose premises are insured against fire and every holder of a real estate mortgage who is protected by a fire insurance policy. Even allowing for overlapping, these together may well outnumber the individual bond and stock

holders, and those, at the lowest estimate, are several times more numerous than the padded aggregate of labor union membership.

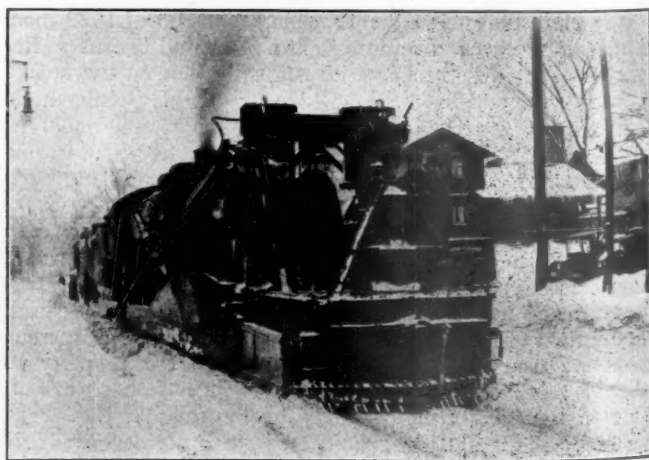
Controversial Deadwood

Let me anticipate one or two objections because there is no intention here to add to the flood of endless ignorant talk on the subject. To a measurable extent the railroads are already following the policy here advocated in that they are not spending on capital account, anything like what they should spend if the development of the country is to go ahead. It is also true that many roads have work in progress which must be completed out of earnings, unless the expenditures already made thereon are to remain idle, with the interest account steadily swelling. It is a positive disadvantage to the railroads, so far as the public attitude toward them and understanding of them are concerned, that they are able to stand a tremendous amount of ill usage and still carry on their public service without effects so bad as to be immediately apparent.

Suppose, to begin with, we inaugurate a change in the character of railroad publicity. Too many executives are talking weightily about the situation of the railroads as a whole and about general principles. The general run of men care little about general principles and understand less. But when a railroad man talks about the practical difficulties in the operation of his own road, says specifically what he wants to do to take better care of his shippers, tells why he cannot do it at once, and when and how and under what conditions he can do it—then he gets some really thoughtful attention from his hearers.

Much, if not most, of the publicity work of the Railway Executives Association has been excellent of its kind—and of the wrong kind. Those not already friendly to the railroads cannot see the vital requirements of individual roads in discussions of the general railroad situation. The railroad baiters from the Middle West are now trying in Congress, to discredit the valuation proceedings they, or people like them, originated, simply because the results have not proved to their taste. The railroads might well take in hand the ventilation of this whole valuation sham. Each road can show that the commission and its valuation staff have conceded to the railroads only what they were obliged to concede, and that the so-called "tentative final valuations" resulting are merely minimum valuations.

Give us the long denied dividends we have earned. If the public wants more and better service let it come in, through stock partnership and share the risks—with the profits, when there are any.



Kadel & Herbert

Clearing the New York Central

General News Department

The Pennsylvania will have an employees' newspaper in the Eastern region similar to those now published in the Central and Northwestern regions. Walton M. Wentz, heretofore special agent in the company's publicity bureau at Philadelphia, will be editor.

A dinner for the purpose of promoting interest in the proposed National Transportation Institute was held at the Waldorf-Astoria Hotel in New York on January 19. Another meeting will be held in Washington early in February where it is hoped that definite steps toward organization will be taken.

The Los Angeles & Salt Lake (Union Pacific) began the operation of trains on the new branch from Delta, Utah, to Fillmore, on January 15. The new line is 32 miles long and penetrates a district which has 100,000 acres of irrigable land. The operation of the branch will be handled from the division headquarters at Salt Lake City, Utah.

The New York Central reports the heaviest fall of snow in New York State since 1874; but passenger trains have been kept moving with only moderate delays. Freight locomotives, however, have been able much of the time to haul only 75 per cent of their normal loads. At times 100 locomotives have been at work in ridding the tracks of snow.

A paper on Recent Improvements in Steam Locomotive Design will be presented before the eastern New York section of the American Society of Mechanical Engineers by Mr. Ashworth of the American Locomotive Company at a meeting to be held in Edison Hall, Schenectady, N. Y., on February 23. The paper will be illustrated with lantern slides and moving pictures.

The Chicago, Rock Island & Pacific has decided to abandon the use of coal for locomotive fuel in both Arkansas and Oklahoma; and to convert its locomotives in that district into oil burners. Locomotives on the Louisiana division are already being converted and the change will be made in others as soon as possible, according to the plans of the operating officers.

The Senate on January 22 passed the independent offices appropriation bill carrying the increased appropriations for the Interstate Commerce Commission, as compared with those provided in the House bill, including an increase from \$1,000,000 to \$1,250,000 for valuation, from \$350,000 to \$400,000 for safety work, and an increase of \$200,000 for general expenses.

The National Safety Appliance Company, of San Francisco, Cal., is to test its intermittent induction type of train control on seven miles of single track line of the St. Louis-San Francisco between Nichols, Mo., and Brookline. This installation is to be made in automatic block signal territory. The Chicago & Alton will also make a trial installation of this device on 28 miles of double-track line in automatic block signal territory, north of Bloomington, Ill. The Great Northern also expects to put in a short trial installation.

The Philadelphia & Reading has installed automatic telephones in its locomotive shops and storehouse at Reading, Pa. The system consists of 60 telephones in the locomotive shop and 17 in the storehouse. The central equipment is located in the main office building at the locomotive shop. It was found advisable to install the automatic system instead of increasing the size of the switchboard and employing an additional operator. It was also found that the new system is able to handle 20 per cent more calls in a given time than were formerly handled by the manual system. The

average length of time to complete a call on the automatic system is 13.3 seconds as compared with 50.6 seconds on the manual.

Tie Producers Meet at New Orleans

The National Association of Railroad Tie Producers held its fifth annual meeting at the St. Charles hotel, New Orleans, La., on January 25-26. The program included reports on conditions in the tie industry in the six districts into which the country has been divided and papers on the "Value of Gum as Tie Material," by J. R. Keig, manager of the Hewn Tie and Piling department, Kirby Lumber Company, Silsbee, Tex., and on "Losses on Account of Excessive Season Checking of Ties and Other Timbers—Especially Oak," by C. B. Mitchell, assistant to president, National Lumber & Creosoting Company, Texarkana, Tex.

Shippers Pledge Help to Railroads

The persistent appeals which have been addressed to the New York, New Haven & Hartford to compromise with its late shopmen who struck, have been made the subject of a vigorous resolution by New England shippers, endorsing the road's position. This resolution, adopted last week in Boston, reads in part as follows:

Whereas, The present unfavorable criticism of railroad operation and management partakes of the nature of propaganda in favor of public ownership and

Whereas, The attitude of the New England railroad executives towards the striking shopmen is the only one that could have been adopted that would be consistent with good faith and

Whereas, Government ownership of the railroads would be particularly dangerous to the future of New England industry, therefore, be it

Resolved, That the industrial members of the Traffic Club of New England and members of the New England Traffic League deprecate these attacks on the railroads and express their sympathy with and commendation of the efforts made by the managements to furnish railroad service under present conditions . . . and pledge themselves to assist the New England lines in every way possible.

Cars and Locomotives Ordered and Received in 1922

The number of freight cars actually installed in service or ordered for future delivery from car builders during the calendar year 1922 was 145,553, as compared with 69,436 during 1921, according to reports received by the Car Service Division of the American Railway Association.

The reports showed 77,221 freight cars actually placed in service in 1922 or 7,784 more than were both ordered and installed the year before. On January 1, unfilled orders called for the delivery of 68,332. The reports also showed that in 1922, a total of 2,824 locomotives were actually installed or had been ordered from locomotive builders. This exceeded the number installed and on order during 1921 by 1,442. During 1922, 1,379 locomotives were actually installed in service, only three less than the total number installed or on order the year before. On January 1 this year, unfilled orders called for the delivery of 1,445 locomotives.

The Regan Safety Devices Company's Motion Picture

The Regan Safety Devices Company, Incorporated, presented a motion picture showing the operation of its train-control device, before the Railroad Section of the Western Society of Engineers, at Chicago, on Monday evening, January 22, prior to the opening of the evening's program on "Economics of Water Service for Railway Performance." The pictures showed the equipment on the locomotive, the

fixtures along the track, and the different parts and their action in detail. The current flow through the circuits as set up under different conditions, and the action of the air in the air brake system, were illustrated by the use of small moving dots flowing along the lines of the circuits and in the brake pipe system. A view of the air gages and the speed indicator in the cab showed the effect of the action of the apparatus on the train under different conditions. Moving pictures were also shown of the tests made on the Great Eastern at Fairlop, Essex, near London.

N. Y. C. Locomotive 999 Not to Be Scrapped

Locomotive 999 of the New York Central, which was exhibited at the World's Fair in Chicago in 1893, is to be preserved as a historical relic, and will be placed on exhibition at some prominent place, along with the DeWitt Clinton, of 1831. The "999" was built in the West Albany shops in 1892 and was designed by the late William Buchanan, for many years superintendent of motive power of the New York Central. Its well-known high speed records, in 1893, were made by Charles Hogan, on the Empire State Express, on a run when the engine hauled the train through from New York to Buffalo, 440 miles; and the best speeds were made in the last 70 miles. After service on the Empire State Express for a number of years, this engine was renumbered and relegated to more humble duty. In the summer of 1920 it was taken from its regular run on the Pennsylvania division and was restored to all its pristine glory with silver lettering, to haul the DeWitt Clinton train to Chicago for exhibition at the Pageant of Progress. It is now stored at Utica awaiting the time when it will be placed on exhibition either at Grand Central Terminal, New York, or some other suitable place.

Railway Earnings for November

The Class I railroads in November had a net operating income of \$78,860,500, which represents a return, on an annual basis, of 4.46 per cent on their tentative valuation, according to reports filed with the Interstate Commerce Commission. In November, 1921, the net amounted to \$66,884,000, equal to 3.79 per cent.

Operating revenues in November were \$522,631,600, an increase of 12.2 per cent over November, 1921, while operating expenses amounted to \$409,146,000, an increase of 11.2 per cent. Expenditures for maintenance of equipment totaled \$122,012,900, an increase of 17 per cent; for maintenance of way \$61,517,500, a decrease of 1.1 per cent. The number of freight cars in need of repair was reduced by 23,672; locomotives by 357.

The effect of reductions in freight rates is shown by the fact that while the net ton miles increased 31 per cent, gross revenues increased only 12 per cent, as compared with November, 1921.

For the first 11 months of 1922 net operating income was \$693,134,700, compared with \$565,974,000 during the same months of 1921. This is at the annual rate of return of 4.02 per cent compared with 3.28 per cent.

Thirty-four railroads in November had operating deficits of which 16 were in the Eastern district, 3 in the Southern and 15 in the Western. In October 27 reported deficits.

Telephoning to Moving Trains on A. & W. P.

The Atlanta & West Point, which has been experimenting with radiophone transmission for several months past, is preparing to install facilities so that messages may be sent to and from moving trains throughout the principal parts of the company's lines. F. G. Wickersham, signal engineer, who has been making experiments for several months, has had in operation since last June a powerful broadcasting station at his headquarters, College Park, Ga. This station—WDAJ—is a 500-watt station. The president's private car and several other cars have been fitted with radio apparatus, the receiving sets being regular Westinghouse RC type, with Western Electric loud speakers. Apparatus for equipping several trains will soon be ready for use. The College Park station is to be equipped with four transmission tubes of 250 watts, and it will be capable of sending 10,000 miles. It is planned to establish stations also at Montgomery, Ala. and

Augusta, Ga., the latter being for the benefit of the Georgia Railroad, which is allied with the Atlanta & West Point.

It is proposed to put equipment on a freight train, both in the caboose and in the locomotive, so that the conductor and the engineman may communicate with each other.

Mr Wickersham has never experienced any trouble from static; but he proposes to have an auxiliary telegraph plant for use in case of need.

The Missouri & North Arkansas

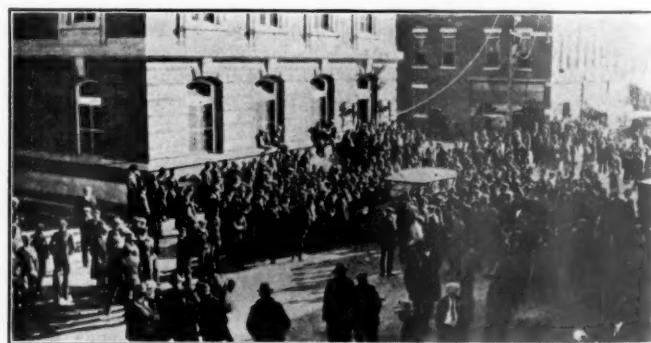
J. C. Murray, general manager of this road, reports that everything is quiet along the line and normal train service is being maintained, with every indication that it can be kept up. The legislature of Arkansas is investigating the situation and has been told by strikers that during the disturbances last week at Harrison they were forced to promise to leave town. The mayor of Harrison and other officials resigned, apparently



International

On the M. & N. A.

at the demand of the "citizens' committee." Two strikers, who were tried for burning bridges and were sentenced to several years' imprisonment, told the Legislative committee that they were innocent, but had pleaded guilty because they believed that the only course to avoid being lynched; and because the judge of the court had not been able to assure them of their personal safety during a trial, if they were to plead not guilty. The strikers' lawyers advised them to



Underwood & Underwood

Harrison, Arkansas, on the Morning After the Lynching

plead guilty, and go to prison, promising to see that they should get out. The legislative committee is to call the officers of Harrison and Boone counties and many citizens of Harrison. At Eureka Springs, 47 miles north of Harrison, a mass meeting has endorsed the work of the Harrison "citizens' committee." At Heber Springs 117 miles south of Harrison, on the 20th, two men were whipped and ordered to leave town.

A Record at Grand Central

The records of the New York Central showed the arrival at New York city on Monday forenoon, January 8, of twenty-six through passenger trains from Chicago, Cleveland, Detroit, Toledo, Indianapolis, Cincinnati, Toronto, Buffalo, Montreal and other cities, bearing 4,028 passengers in sleeping cars; and of these passengers 2,958 had breakfast on the trains. These trains included five sections of the Twentieth Century Limited and five of the Detroit. Of the latter, three sections were allotted to representatives of Dodge Brothers, automobile manufacturers. The occasion of this unprecedented passenger movement was the annual automobile show in New York. A severe snow storm east of Syracuse caused serious delays to some of the trains.

During seven days, January 2 to 8 inclusive, the number of passengers alighting from Pullman cars at the Grand Central Terminal was 48,624. This compares with a record for a similar period, in connection with the automobile show last year, of 40,800.

An officer of the road estimates that the 197 sleeping cars, 21 dining cars and 19 club cars, in the trains which came in on Monday, represented an investment of more than fifteen million dollars.

Canadian Railway Earnings in October

The railways in Canada as a whole carried more freight during October than in any other month covered by these reports and without doubt more than in any other month in their history, says the October report of the Dominion Bureau of Statistics, Transportation Branch. Revenue ton-miles aggregated 4,332,260,487, which was an increase over October, 1921 and 1920, which was the peak month in those years of 26.5 per cent and 26.6 per cent respectively. On account of decreases in rates, however, total revenues were only 5 per cent greater than for October, 1921, and were 7 per cent below October, 1920. The grain crop, which was the largest in the history of Canada, with the long haul from the western provinces to the elevators, was the chief factor in the heavy tonnage carried, but heavy movement of coal, lumber and other building materials also helped to increase it.

OPERATING REVENUES, EXPENSES AND STATISTICS STEAM RAILWAYS OF CANADA, WITH ANNUAL OPERATING REVENUES OF \$500,000, FOR THE MONTH OF OCTOBER, 1922

	1922	1921
Operating Revenues:		
Freight	\$3,314,261	\$3,770,389
Passenger	6,746,804	6,873,547
Total railway operating revenues.....	49,453,809	47,100,262
Operating Expenses:		
Maintenance of way and structures.....	7,867,814	8,716,980
Maintenance of equipment.....	8,529,524	8,561,365
Traffic	1,444,159	982,393
Transportation	18,862,615	17,661,889
Miscellaneous operations	396,593	462,006
General	1,029,539	977,668
Total railway operating expenses.....	37,717,525	37,130,998
Operating Income:		
Net railway operating revenue.....	11,741,284	9,969,263
Railway tax accruals.....	642,320	702,843
Uncollectable revenues	1,011	728
Hire of equipment.....	Cr. 554,974	Cr. 79,835
Joint facilities rents.....	Dr. 48,563	Dr. 67,125
Operating income	11,604,365	9,278,406
Operating ratio	76.26	78.83

The New Haven's Freight Claim Department

The New York, New Haven & Hartford reports a decided diminution in its payments for loss and damage to freight, citing the following figures: 1918, a total of \$1,303,923; 1919, a total of \$2,342,140; 1920, a total of \$1,774,273; 1921, a total of \$2,038,026, and 1922 (10 months), a total of \$695,933. The decrease from 1921 to 1922 was 62 per cent. The work of the freight claim department may be roughly estimated by the number of claims presented, which in 1918 was 164,020, and in the four succeeding years totaled 113,174, 118,836, 64,328, and 47,770, the last mentioned figure being for 11 months. These totals include only the claims presented to the New Haven direct and take no account of those coming from other roads.

During the war many claim investigators joined the armed forces of the nation and claim adjustments did not keep pace with claims presented so that these men, returning after the armistice, found a heavy accumulation of claims awaiting ad-

justment. During 1919 these were materially reduced and in 1920 would probably have shown a greater reduction but for the outlaw strikes. These claims were filed in 1920 and many were adjusted during that year though most of them were carried over into 1921 and adjusted. This is one of the causes for the payments of that year having been so badly out of step with the number of claims presented.

Another thing which contributed to that condition was the fact that many claimants during the busy war period failed to follow up their claims or even to answer requests for additional information. Such claims were "filed for inquiry." In 1920 these were very extensively reopened by claimants.

The number of claims under investigation is now only slightly in excess of a single month's receipts and is thought to be at practically the irreducible minimum.

B. of L. E. to Open Bank in New York

The Brotherhood of Locomotive Engineers, having acquired a substantial interest in the Empire Trust Company of New York, as announced in the editorial columns elsewhere in this issue, will soon apply for a charter for a bank to be opened in New York City. Announcement to this effect was made Wednesday by Grand Chief Warren S. Stone of the brotherhood.

The new bank, it is said, will be conducted on the co-operative principle the same as the brotherhood's Cleveland bank, which has been remarkably successful thus far. The brotherhood and its members will own all the stock of the new institution. The name of the proposed bank and its capitalization will not be made known until the charter is applied for. It is said that the new bank will have several branches in various parts of the city.

The Central Trades and Labor Council of New York for a time had planned to join with the engineers in this banking venture but later decided to start a bank of their own. They have, accordingly, applied for a state charter for the "Federated Trust Company," capitalized at \$2,000,000, and have retained W. F. McCaleb, formerly manager of the engineers' Cleveland bank, to direct their institution for them.

Chicago Association of Commerce

The Association of Commerce of Chicago, elected its Ways and Means committee for 1923 at the regular luncheon on December 20. Fifty-five divisions comprise the committee, including one on transportation and another on railway supplies. Members of the transportation division of the committee are: James Webster, chairman, assistant traffic manager of the New York Central; C. B. Hopper, vice-chairman, general western freight manager of the United American Line; F. A. Butterworth, assistant general freight agent of the Pere Marquette; C. A. Cairns, passenger traffic manager of the Chicago & North Western; L. M. Allen, vice-president and passenger traffic manager of the Chicago, Rock Island & Pacific; W. G. Brown, general passenger agent of the Baltimore & Ohio; E. J. Henry, western traffic manager of the Lehigh Valley; C. L. McFaul, general agent of the Southern Pacific; O. Townsend, general freight agent of the Chicago Great Western; Irvin Longaker, superintendent of branch and suburban offices of the American Railway Express Company; E. P. Vernia, general freight agent of the Chicago, Indianapolis & Louisville; J. F. Vosburgh, freight traffic manager of the Chicago & Alton; J. E. Weller, freight traffic manager of the Pennsylvania, and H. W. Thorp, president and general manager of the Goodrich Transit Company.

Members of the Railway Supplies division are: R. H. Hyland, chairman, president of R. H. Hyland & Company; E. P. Welles, vice-chairman, vice-president of C. H. Bently & Company; F. A. Preston, vice-president of the P. & M. Company; A. C. Moore, vice-president of the Chicago Railway Equipment Company; E. M. Hadley, vice-president of the Chicago-Cleveland Car Roofing Company; F. H. Warren, manager of the railroad department of Hibbard, Spencer, Bartlett & Company; H. A. Walter, vice-president of the Templeton, Kenley & Company, Ltd.; S. A. Aurelius, assistant general manager of miscellaneous sales of the American Steel Foundries; H. S. Smith, purchasing agent of the General American Car Company, and C. F. A. Craft of the Ohio Injector Company.

Traffic News

The Denver & Rio Grande Western will open a city ticket office at 340 South Main street, Salt Lake City, Utah.

D. A. Lahey, traffic manager of the Quaker Oats Company, with headquarters at Chicago, has been appointed vice-president.

The New York City Association of Passenger and Ticket Agents has elected E. J. Bradley, of the Consolidated Ticket Office, 42nd street, president for the ensuing year.

C. A. Cairns, passenger traffic manager of the Chicago & North Western, has been elected chairman of the executive committee of the Western Passenger Association for his third consecutive term.

D. Hurry of the freight traffic department of the Chicago & Alton has been appointed field representative of the Chicago Association of Commerce. He will assist and advise shippers on rates, routes, schedules and general service.

The Transportation Club of Seattle, Wash., has elected officers for the ensuing year as follows: C. M. Grubbs (N. P.), president; I. P. Iversen (N. P.), first vice-president; J. H. Digby (Pacific S. S. Co.), second vice-president; and R. A. Nichols (G. N.), secretary.

The Philadelphia & Reading announces that beginning with February 1, single trip tickets will be good for stopover at any point, and will be valid for one year. The New York, New Haven & Hartford recently announced that local tickets would be valid for 30 days.

F. W. Thompson has been appointed chairman of the Canadian Freight Association and the Canadian Car Demurrage Bureau, western lines, and will have jurisdiction over freight inspection, warehouse storage, weighing agreements and car demurrage on all lines in Canada west of Port Arthur, Ont., and Armstrong.

The Panama Canal reports for the month of November a gain of 980,078 tons in cargo and of \$889,526 in tolls over the month of November, 1914. Cargo tons carried in November, 1921, totaled 584,440 and tolls collected were \$923,048, as against 1,426,860 tons of cargo and \$1,264,436 collected in November.

The Interstate Commerce Commission on complaint by the Minneapolis & St. Louis, has issued Service Order No. 37, ordering the Peoria & Pekin Union to continue to interchange freight between the Minneapolis & St. Louis and connecting carriers at Peoria, Ill. Controversy exists between the two roads over the terms under which the interchange shall be made.

A resolution providing for the appointment of a committee of five Senators to investigate the problem of a nine-foot channel in the waterway from the Great Lakes to the Gulf of Mexico was introduced in the Senate on January 16 by Senator McCormick of Illinois. It was proposed that the committee make a final report with recommendations to the Senate not later than May 1, 1924.

Grain vessels now lying at Buffalo waiting to be unloaded are said to number about 100, holding nearly 29,000,000 bushels of grain. A large part of this grain will stay where it now is until Spring, when it will be sent east by canal. Total receipts of grain (including flour as grain) at Buffalo this season have been 295,830,566 bushels more than double any record since 1916.

The Chicago & North Western operated 11 special trains from Chicago to Cary, Ill. (38 miles), and return, for the accommodation of the spectators at the Illinois state championship ski meet, which was held on January 21. On the going trip, a total of 5,653 people were carried and 5,709 used the special trains for the return ride. Extra service was also provided for spectators coming to Cary from the north.

The Western Pacific has organized the Western Refrigerator line to carry California fruit and vegetables to eastern markets. The refrigerator company has taken over the business of icing cars and is improving and enlarging the icing plants along

the line. Arrangements are also being made for the establishment of icing stations on roads with which the Western Pacific has connections.

M. H. Bohrer, northern passenger agent for the Mobile & Ohio, was elected president of the General Agents' Association of Chicago, Ill., at the monthly meeting on December 28. J. R. Van Dyke, general agent in the passenger department of the Chicago, Burlington & Quincy, was elected vice-president and W. G. Ferstel, district passenger agent of the Illinois Central, was elected secretary and treasurer.

The Pennsylvania Railroad announces a reduction in the price of ten-trip tickets on the ferry between Philadelphia and Camden, from 30 cents to 25 cents, to take effect on January 29. A single fare on the ferry costs four cents. Citizens of New Jersey have been asking for a reduction in the price of these tickets, having seen, a few weeks ago, that the Ferry Company had declared a special dividend of ten dollars.

The Interstate Commerce Commission would be directed to report to the Senate, according to a resolution proposed on January 20 by Senator Poindexter, of Washington, regarding the extent to which the railroads serving the Northwest Pacific states failed during the last crop season to supply adequate transportation for apples, agricultural and perishable products and lumber, and in general on the question of the sufficiency of transportation facilities in that section of the country. Senator Poindexter read a letter from a constituent stating that fully 50 per cent of the early crop of apples last fall was lost because of a lack of refrigerator cars.

New York Export Managers to Meet

The Export Managers' Club of New York will meet at the Hotel Pennsylvania, New York, on March 20. There will be a general discussion of the problems of the exporter, which will be particularly valuable in view of the prospects for a revival in foreign trade. C. J. Warren, foreign sales manager of the Remington Typewriter Company, will act as chairman at the morning session and S. H. Rose of the Barber Asphalt Company will officiate in a similar capacity in the afternoon.

Coal Production

Revised estimates for the week of January 8-13 indicate a total output of soft coal, including coal coked, mine fuel, and local sales, amounting to 11,172,000 net tons. The final estimate for the first week of the year is 10,993,000 tons, according to the weekly bulletin of the Geological Survey. Preliminary reports for the third week in January show 44,736 cars loaded on Monday and a decline to 32,891 cars on Tuesday, and 30,582 on Thursday. The total output for the week of January 15-20 is expected to be about 10,900,000 to 11,000,000 tons.

Wheat from Western Canada

The movement of grain eastward from Winnipeg, Man., over the Canadian Pacific, in the 91 days ending with November 30, averaged 1,016 cars a day, according to a statement made by an officer of the road before the Kiwanis Club of Winnipeg. In the same statement it was said that this movement was equal to an average of one freight train out of Winnipeg every 45 minutes during the three months. The receipts of grain at Winnipeg during these three months, as shown by the reports of the inspectors, totaled 108,231,513 bushels, which is said to make Winnipeg the greatest wheat market in the world. This total was more than twice as great as the total inspections at Minneapolis.

The Northwest Regional Advisory Board

The Northwest Regional Advisory Board (of shippers) has been organized by the American Railway Association to prevent a recurrence of the car shortage felt last autumn and this winter. This board will furnish the railroads with information on the number of freight cars that will be needed in any seasonal movement. It is made up of 30 men representing shippers of all commodities in the Northwest and met at Minneapolis, Minn. The board will meet every two months, the next meeting being March 1. The committees will meet twice a month and each committee

will furnish, for the industry it serves, dependable statistics of the amount of its freight movement. At the general meeting the needs of all the industries will be correlated and if the total number of cars needed is more than the railroads can supply the allotment to each industry will be prorated in proper proportion at the meeting. The following officers were elected: J. F. Reed, president, Minnesota Farm Bureau Association, chairman; W. H. Perry, traffic manager, Pillsbury Flour Mills Company, vice-chairman; A. H. Stafford associated with the Montana Farm Bureau Federation, vice-chairman for Montana; E. H. Eyhler, associated with the South Dakota Farmers' and Grain Dealers' Association, vice-chairman for South Dakota; R. F. Gunkleman, associated with the North Dakota Farmers' and Grain Dealers' Association, vice-chairman for North Dakota; Lee Kuempel, assistant manager of the Minneapolis Traffic Association, secretary; Herman Mueller, associated with the St. Paul Traffic Association, assistant secretary and Curtis L. Mosher, assistant agent of the Ninth Federal Reserve Bank, was elected an alternate.

The Northwest Regional Advisory Board is the second to be organized by the American Railway Association to form a board for each of the car service districts into which the United States has been divided. The Northwest Board represents Montana, North and South Dakota and Minnesota.

Reduced Rates for Mileage Tickets

The railroads and the public may expect an announcement shortly that the Interstate Commerce Commission has ordered the railroads to sell interchangeable mileage book tickets at a considerable reduction under the regular passenger fare rate of 3.6 cents a mile. The Interstate Commerce Commission has not yet publicly announced this decision, but the Washington Herald on January 24 published in a page of "International News-reel" photographs, one showing Senator James E. Watson of Indiana and A. M. Loeb, president of the National Council of Traveling Salesmen's Associations, holding between them what looks like a decision of the Interstate Commerce Commission in mimeograph form. Under it is the caption, "Mileage Book Privilege Restored" and the statement that an announcement of the Interstate Commerce Commission of a 20 per cent reduction on 2,500-mile mileage books was received by Senator Watson, "author of the law," and Mr. Loeb.

Senator Watson introduced various bills in the Senate providing for a reduced rate mileage book, although the law that was finally passed was in a different form, leaving the fixing of the rates to the commission. At his office it was stated that he had a copy of the report, but that it had been understood that the photograph was not to be released until after the decision was given out.

After many inquiries had been made at the commission's office Chairman Meyer in the afternoon authorized the following.

"I am not speaking as chairman; nor can I speak for every member of the commission. I am speaking as an individual commissioner and as the commissioner who has had immediate charge of the Interchangeable Mileage Ticket Investigation.

"A proposed report was submitted by me to the commission soon after the conclusion of the arguments in the case. This report has had the earnest consideration of the commission. Its deliberations on this case have not yet been entirely concluded. Any announcement regarding our action or probable action is therefore unauthorized and unwarranted. Representatives of the press have advised my office that a mimeographed copy of a proposed report before the commission had found its way beyond the offices of the commission. If this is true such copy can have gone there only as a result of gross impropriety.

"Many and persistent inquiries have been made of me personally and of my office for weeks past regarding this case. All have been answered substantially in the same way; namely, that the case was receiving the active consideration of the commission and a decision would be announced at the earliest practicable date.

"The commission has always felt and still feels that its decisions in contested cases, involving as they often do matters of great public concern, and affording at times opportunities for personal gain from advance information concerning them, should be vigilantly safe-guarded until they can be announced to all parties at the same time. This is uniformly accomplished in an orderly manner through our press table arrangements and service upon all parties."

Commission and Court News

Interstate Commerce Commission

Commodity Rates to Aid From

Mississippi Valley Territory

By a supplemental fourth section order dated January 19, the commission has granted a petition filed by the interested carriers for a postponement to July 1, of the date of expiration of its order covering commodity rates from and to points in Mississippi Valley territory and authorizing the continuance of such rates until July 1, 1923, via routes operating through Southeastern territory, without observing the long-and-short haul provision of the fourth section.

The extension granted applies to rates on all commodities. The commission wishes it to be understood, however, that any further extension will be conditioned upon carriers filing upon statutory notice to become effective not later than July 1, 1923, rates in conformity with the provisions of the fourth section on grain and grain products, canned goods, iron and steel articles, agricultural implements, farm wagons and furniture, including refrigerators. The extension of this order to July 1 is also made in consideration of assurances on the part of the interested lines that they expect to be in a position to present by that date for public consideration their complete revision of the commodity rates between Ohio and Mississippi river crossings, Eastern and Virginia cities, South Atlantic and Gulf ports on the one hand, and Southern territory on the other, and also the basis for such commodity rates between points within the said territory.

State Commissions

The Nebraska State Railway Commission will hold a hearing at Lincoln, on March 2, on the reasonableness of the present rates on grain to Omaha and between intrastate points.

The Railroad Commission of California has ordered the Tidewater Southern to correct infractions of the Commission's rules for overhead line construction and to remove hazardous conditions throughout its entire overhead system by May 1, 1923. The Commission found a total of 217 infractions. The Tidewater Southern is an electric line to Modesto, controlled by the Western Pacific.

Personnel of Commissions

Allison Mayfield, chairman of the Texas Railroad Commission, died at Sherman, Tex., on January 23, from heart trouble.

Adolph Kanneberg, of Milwaukee, Wis., has been nominated as a member of the Wisconsin Railroad Commission.

H. A. Frazier has been appointed recorder of the Railroad Commission of California, succeeding W. A. Fitzgerald, who has resigned to enter private business.

Court News

Chief Clerk at Dock Cannot

Make New Transportation Contract

The Circuit Court of Appeals, Ninth Circuit, holds that the chief clerk of clerical work at a railroad's office at a dock could not bind the railroad by making a new contract for the transportation of a cargo of silk waste, which, having become wet and fermented, could not be forwarded under the original shipping contract. The clerk was neither an "agent" nor a "station agent," and had not the authority of an agent. He proposed to send the silk by silk train service, but his superiors declined to be bound by his agreement. The action was for damages for the refusal. Judgment for plaintiff was reversed.—*Davis v. American Silk Spinning Co.*, 282 Fed. 954.

Stopping Unscheduled Train at Station on Time of Another Not Implied Invitation to Passenger

The Massachusetts Supreme Judicial Court holds, in an action for injuries to a passenger while attempting to board a train, that if a train comes to a stop at a station, although not scheduled to stop there, upon the time of a train which was scheduled to stop, and which a passenger has gone there to take, it cannot be ruled as matter of law that these circumstances constitute an implied invitation to the passenger to take the train; and an instruction to that effect is erroneous, the question being one of fact for the jury.—*McPharland v. Boston, R. B. & L. (Mass.)*, 136 N. E. 168.

Failure to See Approaching Train at Crossing

An automobile driver, after crossing a track on which a standing car obstructed his view, had a clear space of 19½ ft. before crossing another track on which was an approaching train. Although he could have stopped his automobile within six inches, he was struck by the train. The Wisconsin Supreme Court holds that his failure to see the train until it was within a foot of him amounted to more than a slight want of ordinary care; and a judgment for the defendant railroad was affirmed.—*Twist v. Minneapolis, St. P. & S. S. M. (Wis.)*, 190 N. W. 449.

Passenger Ejected for Nonpayment of Child's Fare

In an action for alleged unlawful eviction from a train, the evidence showed that the auditor of the train put the plaintiff off, without using force, at an intermediate station for refusal to pay fare for his minor son. The Arkansas statute, C. & M. Digest, section 879, authorizes railroads to charge half fare for children between 5 and 12, and section 881 authorizes the eviction of any person from trains who refuses to pay fare. The Arkansas Supreme Court holds that upon the father's failure to pay his son's fare the railroad had the right to eject both father and child. Judgment for the plaintiff was reversed and case dismissed.—*St. L.-S. F. v. Smith (Ark.)*, 244 S. W. 741.

United States Supreme Court

North Carolina Railroad Tax Cases

The Supreme Court of the United States has affirmed decrees of the federal district courts for the Eastern and Western Districts of North Carolina in the North Carolina Railroad Tax Cases, denying injunctions to restrain the collection of *ad valorem* property taxes for 1921, imposed for local purposes and the franchise tax imposed for state purposes. The injunctions were sought by the Southern, the Atlantic & Yadkin, the Seaboard Air Line, the Atlantic Coast Line and the Norfolk & Southern. It is held that the property taxes are not obnoxious as denying equal protection of the laws because of discrimination, the plaintiffs having failed to establish intentional and systematic undervaluation of other property of the same class. To the contention of excessive valuation the court said that opportunity to be heard had been given to and taken by the plaintiffs; there was no suggestion of bad faith; and at most there had been only errors of judgment, not subject to review in these proceedings. No taxation of property outside the state had been shown. The franchise tax, it is held, is not an additional property tax, and does not violate the commerce clause. It appears to be upon the privilege of doing an intrastate business, and is not in the nature of a burden on interstate commerce.—*Southern Ry. Co. v. Watts*. Decided January 2, 1923. Opinion by Mr. Justice Brandeis.

Condition in Interstate Free Pass

Is Determined by Federal Law

A passenger riding on a free pass issued to her while she lived in Kansas sustained injuries in Missouri while using it in an interstate journey. She sued in the Missouri courts for \$25,000 and recovered \$8,000. The question in the case was whether the condition in the pass—the usual waiver of right to sue—was to be interpreted by Section 1 of the Hepburn Act or by the laws of Kansas and Missouri. The trial court took the view that the condition was void under the laws and public policy of both Kansas and Missouri, and excluded it from the case. This was affirmed by the state Supreme Court, on the ground that Congress

had not yet legislated on the rights and liabilities of parties to free passes in interstate carriage. The Hepburn Act is a regulation of carriers in interstate commerce, forbidding the issue of interstate free tickets. And a carrier violating the act is subject to a penalty, and any person, not of those excepted, who uses the pass, is also subject to a penalty.

The Supreme Court of the United States holds that the provision for passes, with its sanction in penalties is a regulation of interstate commerce. The relation of users to the railroad, etc., the railroad company can control by conditions in the passes. Before the passage of the Hepburn Act the court had decided that a passenger who accepts a free pass may exempt a carrier from responsibility for negligence, and no public policy is violated thereby. The determination of state laws could neither permit nor forbid the grant of the pass. It is controlled in its incidents and consequences by the Federal act to the exclusion of state laws and state policies.

The judgment of the state court was reversed and the cause remanded.—*Kansas City Southern v. Van Zant*. Decided January 2, 1923. Opinion by Mr. Justice McKenna.

Carrier's Receipt Specifying Value

Need Not Be Signed by Shipper

The Supreme Court of the United States has reversed the judgment of the West Virginia Supreme Court of Appeals (*Lindenberg v. American Ry. Express Co.*, 88 W. Va. 439), holding that a receipt for goods shipped given by the carrier to the shipper, specifying the value fixed by the shipper, *but not signed by him*, does not relieve the carrier from liability based on actual value, though the rate charged for carriage is that charged on the minimum value of the property, under the posted tariffs.

The case rested upon the proviso to the second Cummins amendment of 1916, which exempts from the clause imposing on the carrier liability for actual loss (1) passengers' baggage and (2) other property, except live stock, which the Interstate Commerce Commission authorizes to be carried on "rates dependent upon the value declared in writing by the shipper or agreed upon in writing as the released value" thereof. The shipment consisted of two trunks weighing, respectively, 200 and 100 pounds and a 10-pound package, shipped from Indianapolis to Charleston. On arrival the 200 pound trunk was found to be damaged to the extent of \$916 for which sum the state court gave judgment. The carrier admitted liability for \$110 under the terms of the receipt.

The Supreme Court of the United States holds that neither the statute, the pertinent words of which are those above quoted, nor the order of the commission, requires the signature of the shipper. "It is not to be supposed that the commission would attempt to add anything to the substantive requirements of the statute, and its order does not purport to do so; but the form of receipt which the express companies were authorized to adopt contains a recital to the effect that as evidence of the shipper's agreement to the printed conditions he 'accepts and signs this receipt,' and a blank space is provided for his signature. Naturally, such signature would be desirable as constituting the most satisfactory evidence of the shipper's agreement, but it is not made a prerequisite without which no agreement will result, and a subsequent report of the Commission on the subject of bills of lading is persuasive evidence that there was no such intention. (*Bills of Lading*, 52 I. C. C. Rep. 681.) 'It is sufficient if the shipper accepts the carrier's bill of lading without himself signing it. It becomes binding upon him by his acceptance, he being presumed to know and accept the conditions of the written bill of lading.'"

The opinion continues to the effect that the shipper by receiving and acting upon the receipt, although signed only by the carrier, assented to its terms and it thereby became the written agreement of the parties. In the absence of a statutory requirement, signing by the shipper was not essential. Although his signature would have brought into existence additional evidence of the agreement, it was not necessary to give it effect. And his knowledge of its contents would be presumed. Having accepted the benefit of the lower rate dependent upon the specified valuation, the shipper was estopped from asserting a higher value. To allow him to do so would be to violate the plainest principles of fair dealing.—*American Ry. Express Co. v. Lindenberg*. Decided January 8, 1923. Opinion by Mr. Justice Sutherland.

Foreign Railway News

East Indian Railways Order Fifteen

Locomotives from British Firm

The East Indian Railways have ordered from Hawthorn, Leslie & Company, Newcastle-on-Tyne, England, 15 superheated heavy freight locomotives, according to advices from London.

General Manager of British

Railway Joins Locomotive Firm

Sir Sam Fay, general manager of the Great Central of England, until January 1, when this line was consolidated with other roads to form the London & North Eastern, has been elected chairman of the board of directors of Beyer, Peacock & Company, Ltd., the well-known firm of locomotive builders of Gorton, Manchester, England.

Great Western of England Bringing

Acquired Lines Up to Its Standard

The Great Western Railway, which, under the recent wholesale consolidations in England, has acquired the Cambrian Railway, is taking steps to bring this property up to Great Western standards. A new station, and possibly a new hotel, is planned for Aberystwyth. A considerable amount of double-tracking is also planned and the management is looking into the possibilities of developing an extensive summer tourist traffic to points along the Welsh coast.

Irish Railway Strike Narrowly Averted

A strike on the Irish railways has been narrowly averted, according to the Times (London), by the announcement on the part of the government that it would take over all railways not able to pay present wages and would guarantee operating expenses but no dividends. It is thought that the Dublin & South Eastern, the Great Northern and the Midland & Great Western will undertake to pay present wages and thus avoid government control. The Great Southern & Western, however, has been forced to accept the government's offer as have a number of smaller lines. The government has urged the companies to consolidate into a few large systems.

Troop Train Accident in Spain

One of the most serious railway accidents in Spain in recent years occurred near Onteniente on December 23, according to the Times (London), when a troop train collided with a freight train resulting in the injury and death of more than 100 persons. Onteniente is about 60 miles south of Valencia.

The troop train, made up of 17 coaches drawn by two locomotives, was ascending a heavy grade when one of the locomotives failed. The other locomotive was not sufficiently powerful either to keep the train moving or to prevent its backing down the grade, which it did, colliding with the freight train which was switching at the station.

Proposed Electrification in Mexico

Alfred Crewdson of Manchester, England, and British associates who own the Coahuila & Zacatecas Railroad are making preparations to electrify that line which runs between Saltillo and the mining town of Concepcion del Oro, 78 miles, with a branch line from San Pedro to Avalos, 17 miles. The railroad was built some years ago, primarily to serve the Mazapil Copper Company, Ltd., which is owned by the same interests. The company owns copper mines at Concepcion del Oro and Mazapil, and operates a smelter at the former place and another one at Saltillo. The railroad is of 3-foot gage. Stephan Phindler, electrical engineer for the Mazapil Copper Company, Ltd., is now making the surveys and estimates for the proposed electrical in-

stallation. The project involves the building of a dam and water storage reservoir and the erection of a hydroelectric plant. The advisability of changing the gage of the line to standard and extending it through the state of Zacatecas is being considered. The road now connects with the National Railways of Mexico at Saltillo, but there is no interchange of cars because of the difference in gages of the two lines. It is stated that by extending the road about one hundred miles a rich mineral country as well as valley lands that are highly susceptible of agricultural development would be given a transportation outlet. R. H. Jeffrey is vice president and general manager of the Coahuila & Zacatecas Railroad, with headquarters at Saltillo.

Stockholders of Interoceanic Railway

of Mexico Extend Moratorium

The debenture stockholders of the Interoceanic Railway of Mexico have agreed to extend the moratorium until January 26, thus avoiding receivership. The moratorium has been in existence for several years due to the taking over of the property by the Mexican government and operating it without any compensation to the proprietors. At the meeting of the shareholders held in London during the latter part of November there was a strong sentiment for the appointment of a receiver but this was deferred due to the receipt of a cablegram from Mexico to the effect that the government was willing to confer with representatives of the company in the effort to reach an equitable basis for settlement.

Australian Government Plans Gage

Unification Despite State Opposition

The government of the Commonwealth of Australia is determined to proceed with its plans for the unification of gages of the Australian railways in spite of the lukewarm attitude of the states of Victoria and South Australia according to the Times (London) Trade Supplement. The gage unification plan was described in the *Railway Age* of January 7, 1922, page 107. According to the plan, one-fifth of the cost of unification is to be borne by the Commonwealth and the remainder by the states on a population basis. If all the states do not agree to the unification plan, the Commonwealth may enter into an agreement with one or more states for the carrying out of as much of the plan as relates to those states.

Briefly, the unification plan is as follows:

- (1) Western Australia: Construction of a standard-gage railway from Fremantle to Merredin and conversion of the existing railway from Merredin to Kalgoorlie.
- (2) South Australia: Construction of a standard-gage railway from Port Augusta to Lochiel; conversion to the standard gage of all existing railways of a gage of 5 ft. 3 in.; conversion of the existing railway from Terowie to Peterborough from a gauge of 3 ft. 6 in. to the standard gage; and strengthening of the existing bridge over the Murray river at Murray Bridge.
- (3) Victoria: Conversion to the standard gage of all existing 5 ft. 3 in. railways.
- (4) New South Wales: Replacement of the 60 lb. rails in the existing railway from Grafton to Kyogle with 80 lb. and the necessary improvement of that railway for fast and heavy traffic; and construction of a standard gage railway from Kyogle to a point on the border of Queensland in the vicinity of Richmond Gap, Queensland.
- (5) Queensland: Construction of a standard-gage railway from a point on the border of New South Wales in the vicinity of Richmond Gap to South Brisbane.

Officers of the Recently Consolidated British Railways

Some of the more important officers of the newly-formed London & North Eastern Railway are as follows: R. L. Wedgwood, formerly general manager of the North Eastern Railway, chief general manager; J. Calder, formerly general manager of the North British Railway, general manager of the Scottish area; Alexander Wilson, formerly assistant general manager of the North Eastern, divisional manager of the North Eastern area; S. A. Parnwell, formerly general manager of the Great Eastern, divisional general manager of the Southern area; R. Bell, formerly assistant general manager of the North Eastern, assistant

general manager; and Kenelm Kerr, formerly passenger manager of the North Eastern, assistant general manager.

Important officers of the London Midland & Scottish Railway are announced as follows: Arthur Watson, formerly general manager of the London & North Western, general manager; H. G. Burgess, formerly principal assistant to the general manager of the London & North Western, the same position with the new company; H. Marriott, assistant to general manager, parliamentary; J. Pike, assistant to general manager, rates and fares; W. Clower, formerly assistant general manager of the Midland Railway, assistant general manager, staff and labor; T. A. Kenyon, assistant to general manager, general; Glynn Roberts, assistant to general manager, indoor; H. V. Mosley, assistant to general manager of the Midland division with headquarters at Derby; W. E. Preston, assistant to general manager, statistical, with headquarters at Manchester; D. A. Matheson, general manager of the Caledonian Railway, deputy general manager for Scotland; J. H. Follows, chief general superintendent with headquarters at Derby; Ashton Davies, general superintendent of the Western division with headquarters at Manchester; R. Killin, general superintendent of the Midland division with headquarters at Derby; John Ballantyne, general superintendent of the northern division with headquarters at Glasgow; F. W. Dingley, superintendent of motive power with headquarters at Crewe; S. H. Hunt, chief goods manager; E. F. C. Trench, chief engineer; George Hughes, chief mechanical and electrical engineer with headquarters at Horwich.

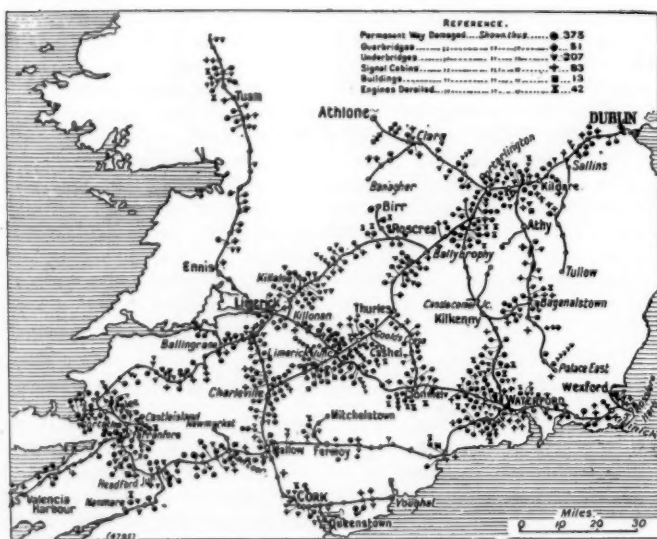
The headquarters of both the London, Midland & Scottish and the London & North Eastern will be in London. Under the consolidation plans Great Britain will have four railway systems, viz. the Great Western and the Southern in addition to the two already named. The new Great Western system is made up by the absorption of several smaller roads into the present Great Western Railway and officers of this line will, for the most part, continue in the same positions with the new system. Officers of the Southern Railway have not been announced as yet. The principal railways forming the new systems are as follows:

London & North Eastern—made up by the North Eastern, the Great Central, the Great Eastern, the Great Northern, the Hull & Barnsley, the North British and the Great North of Scotland.

London, Midland & Scottish—made up by the London & North Western, the Midland, the Lancashire & Yorkshire, the North Staffordshire, the Furness, the Highland, the Caledonian and the Glasgow & South Western.

The Great Western—made up by the present Great Western Railway, the Cambrian and a few smaller properties.

The Southern—made up by the London & South Western, the London, Brighton & South Coast and the South Eastern & Chatham.



Malicious Damage to an Irish Railway

The Map Above Shows the Frequency and Nature of the Damage Done to the Great Southern & Western Railway During Guerilla Warfare with "Irregulars." Map Reproduced from the Times (London) Which Credits the "Irish Times."

Equipment and Supplies

Locomotives

THE NORFOLK SOUTHERN is inquiring for 4 Consolidation type locomotives.

THE MINNESOTA TRANSFER COMPANY is inquiring for two 8-wheel switching locomotives.

THE CENTRAL OF NEW JERSEY has ordered 6 suburban locomotives from the Baldwin Locomotive Works.

THE W. R. GRACE & Co., New York, has ordered one switching locomotive from the American Locomotive Company.

THE NEW YORK, CHICAGO & ST. LOUIS has ordered 6 Pacific type locomotives from the American Locomotive Company.

THE CENTRAL OF GEORGIA has ordered 5 Mountain type locomotives from the American Locomotive Company and 10 Mikado type from the Lima Locomotive Works.

THE PEORIA & PEKIN UNION has ordered two 0-8-0 type switching locomotives from the Baldwin Locomotive Works and is inquiring for 2 Mikado type locomotives.

THE ST. LOUIS SOUTHWESTERN, reported in the *Railway Age* of January 13 as inquiring for 15 Consolidation type locomotives, has ordered this equipment from the Baldwin Locomotive Works.

THE CHICAGO & EASTERN ILLINOIS, reported in the *Railway Age* of January 20 as inquiring for 10 Mikado type locomotives, has ordered this equipment from the American Locomotive Company.

THE ILLINOIS CENTRAL, reported in the *Railway Age* of January 13 as inquiring for 35 Mikado type and 15 Mountain type locomotives, has ordered 35 Mikado type from the Baldwin Locomotive Works and 15 Mountain type from the American Locomotive Company.

Freight Cars

THE NORTHERN PACIFIC is inquiring for 15 steel underframes.

THE SOUTHERN PACIFIC has ordered 575 general service cars from the General American Car Company.

THE ILLINOIS CENTRAL is inquiring for 125 steel underframe caboose cars 28 ft. long of 30 tons' capacity.

THE AMERICAN TAR PRODUCTS COMPANY, Chicago, is inquiring for 10 tank cars of 10,000 gal. capacity.

THE GRAND TRUNK is having 320 refrigerator cars repaired at the shops of the National Steel Car Corporation.

THE CANADIAN NATIONAL has ordered 100 general service cars of 50 tons' capacity from the Pressed Steel Car Company.

THE CENTRAL OF GEORGIA has ordered 100 stock cars, 300 hopper cars, 200 composite gondola cars and 500 box cars from the Chickasaw Shipbuilding Company.

THE CHICAGO, INDIANAPOLIS & LOUISVILLE, reported in the *Railway Age* of January 6 as inquiring for 300 steel underframes and steel superstructures for gondola cars, has ordered this equipment from the Pullman Company.

Passenger Cars

THE CANADIAN NATIONAL is inquiring for 10 horse baggage cars.

THE BALTIMORE & OHIO, reported in the *Railway Age* of January 13 as inquiring for 4 dining cars, has ordered this equipment from the Pullman Company.

THE HUDSON & MANHATTAN is inquiring for 25 motor car passenger bodies.

THE CENTRAL OF NEW JERSEY has ordered 3 baggage and mail cars from the American Car & Foundry Company.

THE BUFFALO, ROCHESTER & PITTSBURGH is inquiring for 7 coaches, 3 baggage and mail and 6 baggage cars, all to be 66 ft. long and of steel construction.

THE UNION PACIFIC, reported in the *Railway Age* of January 6 as inquiring for 21 baggage and mail cars, has ordered this equipment from the Standard Steel Car Company.

THE AMERICAN RAILWAY EXPRESS has ordered 150 express refrigerator cars from the General American Car Company. These are in addition to the order for 150 placed last year.

THE UNION PACIFIC, reported in the *Railway Age* of December 9 as inquiring for 300, 50-ft. refrigerator cars equipped for passenger service, has ordered 200 from the American Car & Foundry Company and 100 from the General American Car Company.

Iron and Steel

THE AKRON, CANTON & YOUNGSTOWN has ordered 1,500 tons of rail from the Carnegie Steel Company.

THE ILLINOIS CENTRAL has ordered 679 tons of structural steel for use at Louisville, Ky., from the Virginia Bridge & Iron Company.

THE CHICAGO, BURLINGTON & QUINCY has ordered 439 tons of structural steel for viaducts at Aurora, Ill., from the Milwaukee Bridge Company.

Machinery and Tools

THE KANSAS CITY SOUTHERN has ordered one 250-ton, 70-ft. traveling crane and one 15-ton locomotive crane from the Whiting Corporation, Harvey, Ill.

Miscellaneous

THE NEW YORK CENTRAL will receive bids until 12 o'clock noon February 7, on frogs, switches, track bonds, etc.

THE NEW YORK CENTRAL will receive bids until 12 o'clock noon February 2 for railway motors, multiple unit control equipments and structural steel for repairs to bridges.

THE CHILEAN STATE RAILWAYS, reported in the *Railway Age* of November 25 as asking for bids on telephone and signal material, have postponed the date for receiving bids for the telephone material from January 15 to February 16 and for the signal material from February 15 to April 2. Bids are also wanted on February 1 for 250,000 tons of coal for steam locomotive use in 1923. All the above bids will be received at Santiago, Chile, but information will be furnished from the New York City office at 141 Broadway. The Chilean State Railways are also asking for bids, to be opened in the New York City office, for various supplies covering its requirements for 1923, as follows: On February 10 for one air compressor and one transformer; February 10 for iron and steel, galvanized iron, bronze, lead, zinc, bars and plates, also varnish and paints; March 8 for wire, steel pipe, iron pipe, copper pipe and lead pipe, also for rubber goods; March 21 for accessories for electric and acetylene welding and solder; April 7 for electrical material spare parts, and spare parts for cranes and for auto buses; May 1 for heavy machinery and shop tool machinery, and bolts, nuts and rivets; May 26 for lubricating oils, illuminating oils, grease, waste, nails and screws, and spare parts for locomotives, passenger cars and freight cars.

Signaling

THE NEW YORK CENTRAL has ordered from the Hall Switch & Signal Company 700 relays, 50 time releases, 12 floor pushes, 12 electric locks and 50 switch boxes, all for use on the lines west of Buffalo.

Supply Trade News

E. E. Rush has been appointed manager of the cement department of the Robert W. Hunt & Company, Chicago.

H. G. Smith has been elected vice-president, in charge of sales of the Bethlehem Shipbuilding Corporation, Ltd., with office at 25 Broadway, New York City.

H. M. Clawson, assistant to the vice-president of the Franklin Railway Supply Company, Inc., Chicago, has resigned, effective February 1, to become assistant Eastern sales manager of the Buda Company, with headquarters at New York. He was born on July 27, 1886, at Matamoras, Pa., and entered railway service on October 1, 1904, as a clerk in the general manager's office of the Erie. On January 1, 1914, he was promoted to chief clerk to the superintendent and on June 1 of the same year he was made chief clerk to the general manager, which position he held until January 1, 1915, when he was promoted to assistant chief clerk to the vice-president. From



H. M. Clawson

November 15, 1916, to March 1, 1920, he held the position of chief clerk to the vice-president and on the latter date he resigned to enter the employ of the Locomotive Feed Water Heater Company, with headquarters at New York. He held this position until March 1, 1921, when he entered the employ of the Franklin Railway Supply Company, Inc., as assistant to the vice-president, with headquarters at Chicago, which position he was holding at the time of his recent appointment.

The Stewart-Thill Company is the new name of the Walter L. Flower Company, St. Louis, Mo., district representatives of the Conveyors Corporation of America, Chicago.

Wayne Wetherill has opened an office as a consulting engineer in the Real Estate Trust building, Philadelphia, Pa. He was formerly chief engineer of the Link-Belt Company.

F. Bosworth, manager of the St. Louis office of the Chain Belt Company, Milwaukee, has been transferred to Chicago, and will be succeeded by T. F. Scannell, manager of the Chicago office.

The Pettibone-Mulliken Company, Chicago, reported in the *Railway Age* of January 6 as intending to add three one-story buildings to its plant at Chicago, at a cost of approximately \$800,000, has awarded a contract for these buildings to Bowie-Lydon & Company, Inc., Chicago.

T. F. Whelan has been appointed special engineer of the Franklin Railway Supply Company with headquarters in Chicago. For 26 years he served as a locomotive engineer and for the past six years was editor of the Brotherhood of Locomotive Engineers Journal. In his new position he will do educational work among railroad employees.

S. E. Marks has been appointed director of traffic and shipping for the Westinghouse Electric & Manufacturing Company. Mr. Marks will have general oversight of the traffic, shipping and packing activities in all of the electric plants at East Pittsburgh, Pa.; East Springfield, Mass.; Newark, N. J.; Mansfield, Ohio; Cleveland, Ohio; Trafford, Pa.; Derry, Pa.; South Bend, Ind., and Homewood and Pitts-

burgh, Pa. **W. H. Reinherr**, has been appointed assistant superintendent in charge of shipping activities at the East Pittsburgh Works, and **Paul K. Shultz**, supervisor of traffic.

Joseph A. Boucher has been appointed sales manager of the **Gifford-Wood Company**, Hudson, N. Y. Mr. Boucher has been in the service of the company more than 15 years. His first few years were spent in the company's offices at Hudson, much of his time being devoted to engineering work. He subsequently joined the sales force and later was assigned to the New York office. Mr. Boucher's headquarters will be at Hudson.

The Northern Engineering Works, electric crane and hoist builders, Detroit, Mich., has made changes in the addresses of its local sales offices as follows: New York City, 30 Church street, in charge of **H. C. Rood**; Philadelphia, Pa., 51 Estey building, in charge of **John H. Bricker**; Chicago, 53 West Jackson Boulevard, Monadnock building, in charge of **M. H. Haeger**, of the Abell-Howe Company; St. Louis, Mo., Pontiac building, in charge of **J. S. Davidson**.

Plans for the financial reorganization of the **Trumbull Steel Company**, Warren, Ohio, will be submitted to the stockholders at the annual meeting on February 6. The plans are proposed under the no par value stock law of Ohio and necessitate the authorization of 1,500,000 shares of no par value common stock and 15,000,000 of seven per cent, cumulative preferred stock. The no par value stock is to be exchanged for the present \$25 par value stock, share for share, and the present preferred stock is to be exchanged for the new preferred, share for share. It is also planned that 100,000 shares of the new stock shall be set aside for sale to employees. This company has at present an authorized capital of \$10,000,000 preferred stock, all outstanding, and \$25,000,000 common stock, of which about \$14,000,000 or 560,000 shares are outstanding.

S. G. Down, general sales manager of the **Westinghouse Air Brake Company**, Wilmerding, Pa., has been elected vice-president in general charge of sales and commercial activities. Previous to his appointment as general sales manager, he had been president of the **Westinghouse Pacific Coast Brake Company**, at Emeryville, Cal., and western district manager of the **Westinghouse Air Brake Company** and the **Westinghouse Traction Brake Company**. Mr. Down served as general air brake inspector and instructor on the **Michigan Central** until 1902, and then joined the **Westinghouse Air Brake** organization. He was for several years instructor on the company's instruction car and later was appointed mechanical expert with headquarters in Chicago. In 1910 he was appointed district engineer and transferred to San Francisco and shortly afterward he was appointed Pacific district manager. He was largely responsible for the organization of the **Westinghouse Pacific Coast Brake Company** in California, and when it was formed, became vice-president and later president of that company. In 1919 he made an extensive tour of the Far East and established various commercial activities which have resulted in an increased business for the **Air Brake Company** from the Orient.

Samuel M. Vauclain, president of the **Baldwin Locomotive Works**, was decorated with the "Polonia Restituta," second class, which was established by an act of the Polish Diet on February 4, 1921. The presentation was made by Hipolit

Gliwie, commercial consul of the Legation of Poland, Washington, D. C., on January 18. As the title itself, "Reborn Poland," indicates, it is conferred upon those who by their deeds have contributed to the rebuilding and development of the new republic.

W. H. Winterrowd has been appointed assistant to the president of **Lima Locomotive Works, Inc.**, with headquarters at New York City. Mr. Winterrowd was born on April 2,



W. H. Winterrowd

1884 at Hope, Ind. He attended the public schools at Shelbyville, Ind., and was graduated in 1907 from **Purdue University**. During his college vacations he was employed as a blacksmith's helper on the **Lake Erie & Western**, at Lima, Ohio, and as a car and air brake repairman on the **Pennsylvania Lines West**, at Dennison, Ohio. After graduation in 1907 he became a special apprentice on the **Lake Shore & Michigan Southern**, and in 1908 he went with the **Lake Erie, Alliance & Wheeling** as engine-house

foreman at Alliance, Ohio. In 1909 he became night engine-house foreman of the **Lake Shore & Michigan Southern** at Youngstown, Ohio, and in 1910 was made roundhouse foreman at Cleveland. Later in the same year he was promoted to assistant to the mechanical engineer of the **Lake Shore**. Since September, 1912, he has been with the **Canadian Pacific** at first as mechanical engineer, in 1915 he was appointed assistant chief mechanical engineer and in 1918 was appointed chief mechanical engineer, which position he held to the time of his appointment as above noted. Mr. Winterrowd is active in the **Mechanical Section of the American Railway Association**, being a member of the **General Committee**. He is also active in the **American Society of Mechanical Engineers**. Together with **H. H. Vaughan** and **Frank H. Clark** he contributed greatly to the success of the boiler code of the society. Among the papers he has presented is a noteworthy article on refrigerator cars. He has taken particular interest in the railroad section serving as vice-chairman of the executive committee last year and is at present an active member of this committee.

Trade Publications

COALING PLANTS.—The **Howlett Construction Company**, Moline, Ill., has issued a booklet containing line drawings and photographic illustrations of various types of coaling equipment it has recently built for railways, together with illustrations and specifications concerning its line of hoists, car pullers, coaling aprons and other machinery adapted for this use. The principal coaling stations illustrated are concrete plants built for the **St. Louis-San Francisco** and the **Louisville, Henderson & St. Louis**, and frame plants built for the **Great Northern** and the **Illinois Central**.

PROTECTING PIPE AGAINST INTERNAL CORROSION.—In recent years engineers have given considerable study to eliminating the rapid corrosion which occurs in iron and steel pipes carrying hot water under pressure. The result of recent research on this subject is well set forth in a bulletin entitled "The Protection of Pipe Against Internal Corrosion" recently issued by the **National Tube Company**, Pittsburgh, Pa. The bulletin contains a number of papers on the fundamental causes of corrosion, details of the mechanism of corrosion, practical means of preventing corrosion and typical results of corrosion prevention. The methods discussed include mechanical de-aerating of water, fixing free oxygen by chemical combination, combined mechanical and chemical de-aeration and the use of protective coatings.



S. G. Down

Railway Construction

ALABAMA GREAT SOUTHERN.—This company has awarded a contract to the McDevitt-Fleming Company, Chattanooga, Tenn., for the construction of a 70-ft. by 182-ft., three-story, reinforced concrete office building at Chattanooga, Tenn.

ATCHISON, TOPEKA & SANTA FE.—This company contemplates the construction of a section of a third main track near Emporia, Kan.

ATCHISON, TOPEKA & SANTA FE.—This company has awarded a contract to Joseph E. Nelson & Sons, Chicago, for the construction of boiler washing plants at Amarillo, Tex., and Waynoka, Okla., to cost approximately \$70,000.

CHICAGO, BURLINGTON & QUINCY.—This company expects to ask for bids about February 1 for the construction of a new double track line two miles long and a new freight and passenger station at Weston, Mo.

CHICAGO & NORTH WESTERN.—This company has authorized grade reduction and other improvements at various points on the line between Omaha, Neb., and Casper, Wyo., and between Chadron, Neb., and Rapid City, S. D., estimated to cost approximately \$2,000,000.

FLORIDA EAST COAST.—The Interstate Commerce Commission has issued a certificate authorizing the construction of a line extending from Okeechobee in a general southerly direction to a connection with the main line at Lemon City, a suburb of Miami, a distance of approximately 122 miles, with a branch to a point on the Miami Canal, of about 11 miles. The proposed line will be an extension to the branch line now extending from New Smyrna, Fla., to Okeechobee. The road, except for about 10 miles at the southern end, lines through the Everglades and the main purpose is to develop the agricultural resources of that territory.

MISSOURI, KANSAS & TEXAS.—This company, which was reported in the *Railway Age* of January 6 as receiving bids for the construction of a six-stall addition to the roundhouse and a new power house at Franklin, Mo., has awarded the contract to Joseph E. Nelson & Sons, Chicago.

MISSOURI PACIFIC.—This company contemplates the construction of a four-story, brick hospital at Little Rock, Ark., to cost approximately \$450,000.

MISSOURI PACIFIC.—This company closed bids on January 26 for the construction of a 26 ft. by 160 ft., one story frame freight house at Winnsboro, La.

PENNSYLVANIA.—This company has awarded a contract to H. S. Kerbaugh, New York, for excavations at its Summit Avenue Station, Jersey City, N. J., necessary for the construction of an additional platform. The station is used by the Hudson & Manhattan which at times during the day operates trains at intervals of one or one and a half minutes. This, the fact that the station is situated in a deep cut and that the material to be removed is the hardest trap-rock, make the work quite difficult. The amount of excavation is estimated at 23,000 cu. yd. and the cost at \$150,000.

ST. LOUIS-SAN FRANCISCO.—This company is constructing an 80-ft. by 100-ft. tank shop with company forces at Sherman, Texas.

ST. LOUIS-SAN FRANCISCO.—This company will construct a second track from Valley Park, Mo., to Eureka, a distance of nine miles and will double track its bridge over the Arkansas river at Tulsa, Okla.

SOUTHERN PACIFIC.—This company is constructing with company forces two, 40-ft. by 60-ft. one-story, frame shop buildings, with concrete floors, to cost approximately \$11,000. This company is also constructing a 44-ft. by 625-ft., frame car repair shop, to cost approximately \$26,000.

Railway Financial News

CHESAPEAKE & OHIO.—*Van Sweringen Control.*—See article on another page of this issue.

CHICAGO, MILWAUKEE & ST. PAUL.—*Asks Authority for Equipment Trust Certificates.*—This company has applied to the Interstate Commerce Commission for authority to issue \$1,536,000 of 5 per cent equipment trust certificates to be sold at 97¼ to Kuhn, Loeb & Co., and the National City Bank of New York, representing part payment for 100 Mikado locomotives ordered from the Baldwin Locomotive Works at a cost of \$5,769,825.

DENVER & RIO GRANDE WESTERN.—*Petition to Have Interest Withheld.*—A petition was filed in the Federal District Court at Denver, Colo., on January 22 by the New York Trust Company asking for an order directing the receiver of this road not to pay \$301,000 interest on the first consolidated mortgage bonds, due April 1. The filing of the petition is in line with the policy of the Sutro committee, which is representing the refunding and adjustment bondholders, and is designed to secure the return to the Denver & Rio Grande Western of the equity in the Utah Fuel Company's stock, or the payment of the entire \$16,000,000 consolidated mortgage out of that stock.

FONDA, JOHNSTOWN & GLOVERSVILLE.—*Asks Authority to Issue Stock.*—This company has applied to the Interstate Commerce Commission for authority to issue \$178,400 of preferred stock to reimburse the treasury for payments on capital account out of operating revenues.

FORT SMITH & WESTERN.—*Sold.*—This road was sold to the bondholders on January 16 for \$50,000 plus \$800,000 of receivership indebtedness. The bondholders were represented by A. C. Dustin, of Cleveland, Ohio. The sale is subject to the approval of the federal court. The Fort Smith & Western has been in the hands of receivers since October 9, 1915. It owns 197 miles of line between Coal Creek, Okla., and Mile Post, Ark.

GREENBRIER & EASTERN.—*Asks Authority to Issue Stock.*—This company has applied to the Interstate Commerce Commission for authority to issue \$1,000,000 of capital stock. The company says that it had issued \$837,500 of stock for cash subsequent to the effective date of Section 20-a of the Interstate Commerce Act without knowledge as to the provisions of this law requiring the authority of the commission for the issuance of securities. It desires authority for the amount already issued and also \$162,500 to cover expenditures for road and equipment.

INTERSTATE.—*Authorized to Issue Stock.*—The Interstate Commerce Commission has authorized an issue of \$380,000 of capital stock to be sold at not less than par and the proceeds to be used in paying for equipment.

MASON CITY & FORT DODGE.—*Bonds to Be Sold.*—The bondholders' committee for the first mortgage 4 per cent bonds has given notice that it has made an agreement for the sale of the company's 4 per cent bonds to the Chicago Great Western. The sale was made on the condition that the committee delivers at least 80 per cent of the bonds, amounting to \$12,000,000, at an early date.

MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE.—*Asks Authority for Equipment Trust.*—This company has applied to the Interstate Commerce Commission for authority to issue \$2,360,000 of 5 per cent equipment trust certificates for the purchase of equipment to the amount of \$2,979,175 to be sold at 97.4.

MOBILE & OHIO.—*Asks Authority to Issue Bonds.*—This company has applied to the Interstate Commerce Commission for authority to issue and sell \$1,600,000 of 5 per cent equipment trust gold bonds for the purchase of \$2,048,000 of equipment. It is proposed to sell the bonds at 96¼.

NEW YORK, LACKAWANNA & WESTERN.—*Authorized to Reduce Interest Rate.*—The Interstate Commerce Commission has issued a supplemental report on its order authorizing this company to

issue \$10,000,000 of first and refunding mortgage bonds guaranteed by the Delaware & Hudson so as to permit the company to issue 4½ per cent bonds instead of 5 per cent bonds. They are to be sold at 90.85.

NORTHERN PACIFIC.—Bonds Offered.—J. P. Morgan & Co., the First National Bank of New York and the National City Company are offering \$10,000,000 refunding and improvement mortgage 5 per cent gold bonds, series "D," due July 1, 2047, at 99 and interest to yield more than 5.05 per cent. The bonds are not redeemable for 30 years. They are redeemable at the option of the company as a whole, but not in part, but not before July 1, 1953, or on any interest date thereafter, at 105 and accrued interest.

St. Paul & Northern Pacific Bonds.—The \$7,662,000 6 per cent bonds, which mature on February 1, 1923, will be paid at maturity at the office of J. P. Morgan & Co., New York City.

PHILADELPHIA & READING.—Operating Results in 1922.—See article on another page of this issue entitled "P. & R.'s 1922 Operating Net Ahead of 1921."

RICHMOND, FREDERICKSBURG & POTOMAC.—100 Per Cent Stock Dividend.—The directors have declared a 100 per cent stock dividend on \$5,400,000 common and guaranteed stock, payable as soon as the Interstate Commerce Commission approves, to stock of record February 15. This dividend does not apply on the \$4,000,000 non-voting 6 per cent stock outstanding.

SOUTHERN ILLINOIS & KENTUCKY.—Incorporation.—Articles of incorporation for this company have been filed in Jefferson county, Ill., by C. H. Markham, president, and other officers of the Illinois Central. The subsidiary company will handle the construction of the new single track line from Edgewood, Ill., to Fulton, Ky., a distance of 175 miles, which was reported in the *Railway Age* of December 30. The new company will be capitalized at \$40,000.

STANLEY, MERRILL & PHILLIPS.—Acquisition Proposed.—See Wisconsin Central.

TOLEDO, ST. LOUIS & WESTERN.—Disbursing Agent.—The Chronicle states that the Columbia Trust Company has been appointed dividend disbursing agent on the common and preferred stock.

WISCONSIN CENTRAL.—Asks Authority to Acquire Line.—This company has applied to the Interstate Commerce Commission for authority to acquire control of part of 38 miles of the Stanley, Merrill & Phillips by lease.

Dividends Declared

Allegheny & Western.—3 per cent, payable January 2 to holders of record December 20.

Norfolk & Western.—Common, \$1.75, quarterly, payable March 19 to holders of record February 23.

Richmond, Fredericksburg & Potomac.—Common and guaranteed stock, 100 per cent stock dividend, payable to holders of record February 15.

Trend of Railway Stock and Bond Prices

	Jan. 23	Last Week	Last Year
Average price of 20 representative railway stocks	64.68	64.12	56.97
Average price of 20 representative railway bonds	84.24	84.61	82.02

THE NEBRASKA LAW forbidding picketing, commonly called the "right to work law" was recently approved by the people of the state by a majority of over 45,000. The law was passed by the legislature in 1921, and submitted to the people under the referendum provision of the constitution in November, 1922. The act is described as one "defining unlawful interference with the right of any person to work and to pursue any lawful employment, and defining unlawful interference, etc. Congregating about any place of business for the purpose of influencing or attempting to influence others not to trade with or work for any person or firm is outlawed." Violations of the law are to be punished by a fine of not more than \$100, or imprisonment not over 60 days, or both.

Railway Officers

Executive

George Le Boutillier, general superintendent of the Pennsylvania with headquarters at Harrisburg, Pa., has been elected vice-president of the Long Island with headquarters



George Le Boutillier

at New York. Mr. Le Boutillier will assist President Ralph Peters, gradually taking over his work of directing and managing the property of the Long Island Railroad. Mr. Peters is scheduled to retire from active duty in the autumn of this year. Mr. Le Boutillier was born on February 2, 1876, at Cincinnati, O., and was educated at the University of Cincinnati. He entered railway service on August 1, 1895, as a rodman on the Pennsylvania, Lines West. On November 1, 1900, he was appointed assistant

engineer and, on July 1, 1903, division engineer. He was promoted to superintendent on February 1, 1914, and held that position until March 1, 1920, when he became general superintendent, the position he was holding at the time of his recent promotion.

Financial, Legal and Accounting

James E. Gowen has been appointed assistant general solicitor, legal department, of the Pennsylvania.

G. C. Urquhart, real estate agent of the Pennsylvania, Central region, has been appointed assistant to the general real estate agent with headquarters at Pittsburgh, Pa. **W. W. Mayer**, real estate agent, Southwestern region, has been appointed real estate agent, Central region, with headquarters at Pittsburgh, Pa., succeeding Mr. Urquhart, effective February 1.

Operating

L. E. Smith has been appointed general manager of the Tennessee Railroad with headquarters at Oneida, Tenn.

E. J. Knoll has been appointed car accountant of the Chicago, Milwaukee & St. Paul with headquarters at Chicago, succeeding E. F. Hoy, transferred to other duties.

J. L. Hurd, car accountant of the Northern Pacific with headquarters at St. Paul, Minn., has been promoted to assistant general superintendent of transportation with the same headquarters, succeeding W. W. McCauley, deceased.

J. A. Morris, former chairman of the Car Service Division of the American Railway Association at Cincinnati, Ohio, has been appointed district manager of the territory including Ohio, Indiana, Kentucky and West Virginia, with the same headquarters.

S. H. Charles has been appointed district manager of the Car Service Division of the American Railway Association with headquarters at Birmingham, Alabama, effective January 15. Mr. Charles will have the authority of the Car Service Division in the states of Tennessee, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana east of the Mississippi river and the New Orleans terminals.

A. M. Parker, superintendent of the Philadelphia Terminal division of the Pennsylvania, has been promoted to general superintendent of the Eastern Pennsylvania division with headquarters at Harrisburg, Pa., succeeding G. Le Boutillier, recently appointed vice-president of the Long Island. **R. C. Morse**, superintendent of freight transportation, Eastern region, has been appointed superintendent of the Philadelphia Terminal division with headquarters at West Philadelphia, Pa. **R. P. Russell**, assistant superintendent of the Pittsburgh division, Central region, has been appointed superintendent of freight transportation, Eastern region, with headquarters at Philadelphia, Pa., succeeding R. C. Morse. **G. W. Curtis**, trainmaster of the Monongahela division, has been promoted to assistant superintendent of the Pittsburgh division, Central region, with headquarters at Pittsburgh, Pa.

Traffic

D. R. Peck has been appointed general agent of the Midland Continental with headquarters at Chicago.

H. A. Koch has been appointed coal freight agent of the Pennsylvania, with headquarters at Chicago, Ill.

J. B. Middleton has been appointed division freight agent of the Chesapeake & Ohio, with headquarters at Ashland, Kentucky.

C. F. Jones has been appointed general agent for the traffic department of the Akron, Canton & Youngstown and the Northern Ohio, with headquarters at St. Louis, Mo.

H. S. Gray, division passenger agent on the Illinois Central, with headquarters at Dubuque, Ia., has been promoted to assistant general passenger agent, with the same headquarters.

S. C. Griffin, traffic manager of the Sugar Land Railway Company, has been appointed director of traffic of the San Antonio, Uvalde & Gulf, with headquarters at San Antonio, Texas.

V. H. Williams, traveling freight and passenger agent for the El Paso & Southwestern, with headquarters at Chicago, Ill., has been promoted to general agent, with headquarters at Oklahoma City, Okla.

Edward Hart, Jr., has been appointed assistant freight traffic manager of the Baltimore & Ohio with headquarters at St. Louis. **J. G. Fry** has been appointed general southwestern freight agent with the same headquarters.

M. E. Goldenbogen has been appointed general agent of the Wheeling & Lake Erie with headquarters at Cleveland, Ohio. **C. E. Dempsey** has been appointed assistant general freight agent with the same headquarters. The offices of commercial agent and chief of the tariff bureau have been abolished.

W. A. Springall, traveling freight agent of the Missouri, Kansas & Texas, with headquarters at Wichita Falls, Tex., has been promoted to division freight agent, with headquarters at Oklahoma City, Okla., succeeding **R. V. Allen**, whose promotion to assistant general freight agent, with headquarters at St. Louis, Mo., was reported in the *Railway Age* of December 9.

E. G. Irwin, whose promotion to assistant general passenger agent of the Southern, with headquarters at Cincinnati, Ohio, was reported in the *Railway Age* of December 30, was born on November 25, 1879, at St. Louis, Mo. He was educated at Kemper Military Academy and at St. Louis University at St. Louis, Mo. He entered railway service in October, 1899, as an operator on the Missouri Pacific, and during the next three years served as operator and agent at various stations on the same road. He was promoted to ticket seller in the Union station at Sedalia, Mo., in February, 1902, and a year later was transferred to the Union station at St. Louis in the same capacity. He held this position until January, 1910, when he was promoted to chief rate clerk, and in December, 1912, he was appointed chief clerk to the assistant general passenger agent of the Southern, with headquarters at St. Louis. He was transferred to the passenger traffic office at

Cincinnati, Ohio, as chief clerk in February, 1917, which position he was holding at the time of his recent promotion to assistant general passenger agent, with the same headquarters, as noted above.

Garnett King, whose promotion to assistant traffic manager of the El Paso & Southwestern was reported in the *Railway Age* of December 30, was born on December 14, 1876, at Russellville, Ky. He entered railway service in 1900, as a bookkeeper and paymaster on the Arizona & New Mexico, with headquarters at Clifton, Ariz. Three years later he was appointed traveling freight and passenger agent of the El Paso & Southwestern, with headquarters at El Paso, Tex., and in 1907 was promoted to general agent of the El Paso & Southwestern and the Chicago, Rock Island & Pacific, with the same headquarters. He was promoted to assistant general freight and passenger agent of the El Paso & Southwestern, with the same headquarters, in 1909, and in 1913, was transferred to St. Louis, as general agent of the freight and passenger department. He was promoted to general passenger agent on February 1, 1914, his headquarters being at El Paso, Tex. He was serving in this capacity on January 1, 1923, when he was promoted to assistant traffic manager, with headquarters at San Francisco, Cal.

W. C. Barnes, whose promotion to traffic manager of the El Paso & Southwestern, with headquarters at El Paso, Tex., was reported in the *Railway Age* of December 30, was born on February 9, 1877, at Senoia, Ga. He entered railway service on October 21, 1891, as a mailing clerk in the accounting department of the Texas & Pacific at Dallas, Tex., and until 1904 served in various capacities in the accounting and freight departments of the same road. He was promoted to rate clerk of the El Paso & Northeastern, which is now a part of the El Paso & Southwestern, in November, 1904, and shortly after was promoted to chief rate clerk, which position he held until January, 1908. At this time he was promoted to chief clerk to the general freight agent at El Paso, and on March 1, 1912, was promoted to assistant general freight agent. He was promoted to general freight agent on January 1, 1914, and served in that capacity until May 1, 1920, when he was promoted to freight traffic manager, with the same headquarters, which position he held until his recent promotion to traffic manager with jurisdiction over both freight and passenger departments.

W. S. Dawson, whose promotion to general freight agent of the El Paso & Southwestern was reported in the *Railway Age* of December 30, was born on November 10, 1877, at Madisonville, Tex. He entered railway service in 1894, as a messenger and office boy in the office of the superintendent of the Houston East & West Texas, with headquarters at Houston, Tex. He was promoted to yard clerk in 1895, and until January, 1902, held various clerical positions, including chief clerk. In January, 1902, he was appointed chief clerk in the offices of the Sunset Central lines at Shreveport, La., and in March, 1904, he was promoted to agent at Timpson, Tex. He was transferred to Humble, Tex., in the same capacity in October, 1904, and two years later was appointed agent for the Southern Pacific at Shreveport, La. He entered the service of the El Paso & Southwestern in October, 1907, as local freight agent at El Paso, Tex. In May, 1915, he was promoted to general claim agent and during Federal control was in charge of the personal injuries, damage to property and freight claim departments. He was promoted to assistant general freight agent on May 1, 1920, which position he held at the time of his recent promotion to general freight agent.

Mechanical

C. C. Cannon, roundhouse foreman of the Chicago Great Western at Kansas City, Mo., has been promoted to system fuel supervisor, with headquarters at Chicago.

L. L. King, assistant electrical engineer of the Atchison, Topeka & Santa Fe, with headquarters at Topeka, Kan., has been promoted to electrical engineer, with the same headquarters, succeeding C. E. Nutter, deceased.

Engineering Maintenance of Way and Signaling

J. W. Kern, Jr., whose promotion to district engineer of the Illinois Central, with headquarters at New Orleans, La., was reported in the *Railway Age* of January 13, was born on July 26, 1887, near Alexandria, Va. He attended Washington and Lee University at Lexington, Va., from 1903 to 1905, and in October of the latter year entered the service of the Illinois Central as a rodman. During the next six years he served as an instrumentman, masonry inspector and resident engineer in charge of construction work, with headquarters at various points. He was promoted to assistant engineer of the New Orleans division in 1911, and two years later was promoted to track supervisor, with headquarters at St. Louis, Mo. He received a commission as second lieutenant with the Thirteenth Engineers, United States Army, in 1917, and after serving overseas, returned to the United States in 1919 with a commission as captain. Upon receiving his discharge he re-entered the service of the Illinois Central as roadmaster on the Mississippi division. In 1920 he was transferred to the St. Louis division where he was located on January 1, 1923, when he was promoted to district engineer of the Southern lines, with headquarters at New Orleans.

J. E. Fanning, roadmaster on the Illinois Central, with headquarters at Ft. Dodge, Ia., has been promoted to district engineer, with headquarters at Waterloo. Mr. Fanning was born on August 13, 1885, at Buena Vista, Miss. He graduated from the University of Mississippi in 1905, and entered railway service on June 1 of that year as a transitman on the Gulf & Ship Island. He was promoted to assistant engineer in June, 1907, and in October, 1909, was again promoted to supervisor of track. He was promoted to assistant to the chief engineer in June, 1910, and held this position until October, 1916, when he entered the service of the Illinois Central as resident engineer. During the period of government control he served as chief engineer of the Gulf & Ship Island and the Mississippi Central, but returned to the Illinois Central as assistant engineer in charge of construction in March, 1920. He was promoted to roadmaster on the Iowa division, with headquarters at Ft. Dodge, Ia., in August, 1921, which position he was holding at the time of his appointment to district engineer, with headquarters at Waterloo, Ia., on January 1, 1923.



J. E. Fanning

Purchasing and Stores

W. H. King, Jr., has been appointed assistant to vice-president of the Seaboard Air Line with headquarters at Norfolk, Va. He will perform such duties in connection with purchases as may be assigned to him by Vice-President **M. J. Caples**, to whom the direction of the department of purchases and stores has been assigned in addition to his other duties. The office of general purchasing agent has been abolished.

Special

Dr. C. DeMuth and **Dr. E. M. Blair** have been appointed medical officers of the Canadian Pacific, with headquarters at Vancouver, B. C., and will devote their entire time to company service.

W. J. McClement has been appointed chief special agent for the Los Angeles & Salt Lake, with headquarters at Los

Angeles, Cal., succeeding **C. V. Hatter**, who has been assigned to other duties.

Obituary

R. H. Wells, retired architect of the Atchison, Topeka & Santa Fe, died at Glendale, Cal., on January 21.

C. E. Nutter, electrical engineer of the Atchison, Topeka & Santa Fe, with headquarters at Topeka, Kan., died on January 20.

Frank E. Cook, superintendent of the Pullman Company with headquarters at New York, died at Cleveland, Ohio, on January 21, as a result of a fall.

W. C. Kennedy, Minister of Railways and Canals of Canada, died at Naples, Fla., on January 17. Mr. Kennedy was 54 years of age at the time of his death.

C. S. Crane, formerly general passenger agent of the Wabash, died on December 31 at Pasadena, Cal. He was born at Tecumseh, Mich., on December 18, 1847, and entered the service of the Wabash in April, 1864. He was appointed general passenger agent in 1894, and held this position until August, 1908, when he retired from active service. At the time of his death he was serving as special representative of the passenger department. He was one of the oldest employees in the Wabash service.

G. C. White, transportation specialist in the United States Department of Agriculture, died in Washington, D. C., on January 16. Mr. White entered railroad work in 1899 and rose through the grades of freight clerk, freight inspector, rate clerk, chief clerk, claim adjuster, chief rate clerk, tariff compiler, station tariff inspector and industrial agent, to the position of assistant to the general freight and passenger agent of the Southern Pacific in Arizona and Mexico. In 1913 Mr. White went to the federal Department of Agriculture to organize the transportation work of the Bureau of Markets of which he has since been in charge.

H. M. Hallock, vice-president of the Chicago & Illinois Midland, died at his home in Chicago on January 17. Death was caused by acute cardiac dilation. Mr. Hallock was born on June 19, 1873, at Havensville, Kan., and was educated at Campbell University, Holten, Kan. He entered railway service in September, 1890, as a telegraph operator for the Atchison, Topeka & Santa Fe. In 1892 he was promoted to agent and operator and served in this capacity until August, 1899, when he entered the service of the Chicago, Rock Island & Pacific as an operator. He was promoted to train dispatcher in February, 1900, and to chief dispatcher in July, 1901. He was promoted to trainmaster in July, 1903, and held this position until July 15, 1904, when he was promoted to superintendent of the Oklahoma division, with headquarters at Chickasha, Okla. He was transferred to the Panhandle division, with headquarters at Oklahoma City, in July, 1905, and was promoted to general superintendent of the Choctaw district in September, 1906. After serving in this capacity for a short time he was appointed superintendent of the Oklahoma division, with headquarters at El Reno. In 1912 he left the Rock Island and entered the service of the Chicago & Illinois Midland as general manager. In 1919 he was promoted to vice-president, which position he held at the time of his death.



H. M. Hallock